SONY®

VIDEO TRANSMITTER

RSE-500
RSE-400

MONITORING CODEC

PMS-500P
PMS-400P

SERVICE MANUAL

2nd Edition

RSE-500

RSE-400

Serial No. 10001 and higher

PMS-500P

Serial No. 400261 and higher

PMS-400P

Serial No. 400301 and higher

MODEL	EDITION	CONTENTS
RSE-500 **RSE-400** **PMS-500P** **PMS-400P**	**2nd Edition**	***PMS models UPDATED** ***RSE models NEWLY ADDED**
PMS-500P PMS-400P	1st Edition	*PMS models only

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SECTION 1
OPERATING INSTRUCTIONS

This section is extracted from operation manual.

1-1. RSE-500/400 [VIDEO TRANSMITTER]

SONY®

3-862-036-**11** (1)

Video Transmitter

Operating Instructions **EN**

RSE-500
RSE-400

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Owner's Record

The model and the serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. RSE-500/400 Serial No. ______________

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

For the customers in the USA

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

IMPORTANT INSTRUCTION TO USERS

1. This equipment complies with Part 68 of the FCC Rules. On the rear of this equipment is a label that contains, among other information, the FCC registration number for this equipment. If requested, this information must be provided to the telephone company.
2. If the terminal equipment, RSE-500 or RSE-400, causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.
3. The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.
4. If trouble is experienced with this equipment, RSE-500 or RSE-400, for repair or warranty information, please contact Sony Business Information Center ☎1-800-686-7669*. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.
5. The equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs.

* In the USA only. For the customers in Canada and Latin America, please contact your Sony dealer.

For the customers in Canada

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document (s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

This manual focuses on using ISDN lines to conduct a video transmission, but it also covers non-ISDN lines. If you use ISDN lines, consult your Sony dealer for more information.

- The ISDN service may not be available in some areas.

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Precautions

On Safety

Power supply

- Before operating the Video Transmitter, make sure the operating voltage of the unit is identical with that of your local power supply. The Remote Commander operates on two size AA (LR6) alkaline batteries.
- Do not unnaturally bend or crimp power cords, and do not place heavy objects on them. Damage to the cords may result in fire or electric shock.
- To remove a power cord from an AC outlet, pull on the plug. (Do not pull on the cord.)

Do not disassemble the unit

Do not open or disassemble the cabinet of the unit. Electric shock may result if you touch the inside of the cabinet.

Do not put foreign objects into the unit

Avoid having metallic or flammable object, liquid, or foreign matters fall into the cabinets of the unit. Otherwise a malfunction may result.

In case of trouble

In case of trouble such as smoke, odd smell, or noise, turn off all units of the system. Disconnect all the power cords and connecting cords. Then contact the place of purchase or an authorized Sony representative.

Telephone

- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone in the vicinity of a gas leak to report the leak.

On Handling

Installation/storage

Do not expose the system to:

- near water, for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
- extremely low or high temperatures.
- damp or dusty room.
- strong vibration.
- devices which generate strong magnetic fields.
- devices (such as radios or TVs) which transmit strong radio waves.
- noisy place.

Cleaning

Wipe the cabinet and panel with a dry, soft cloth. If the stain is serious, slightly moisten the cloth with mild detergent. Afterward, use a dry cloth to wipe it. Do not use solvents such as thinner, benzine, alcohol, as they may damage the finish of the cabinet.

Chapter 1

Preparation

Features

The Video Transmitter can send and receive voice, pictures and control data via ISDN.

Conventional remote monitoring systems provide only still images. The Sony Video Transmitter provides moving pictures for real-time and precise monitoring. The Video Transmitter system is perfect for the requirements of the distribution and service industries demanding monitoring capabilities.

The system requires only one ISDN line for voice, pictures and control data

High quality images using H.261 compression technology, voice and control data can be sent or received simultaneously via one ISDN line. The ISDN modular jack can be connected directly to the Video Transmitter.

	Picture		Voice		Control data
	Send	Receive	Send	Receive	Send/Receive
RSE-500	●	●	●	●	●
RSE-400	●	—	●	●	●

●: possible —: impossible

Relay control and remote diagnostics

From the central site, you can operate a device (e. g., turning on lights or opening/closing doors) at a terminal site or you can monitor voice at a terminal site.
From the central site, you can diagnose a terminal site and identify the location of malfunctions or errors, enabling quick and efficient recovery.

Automatic data transmission upon detection of alarm signal

Up to 10 remote sites can be registered in one alarm port. When an alarm signal is detected, data is automatically transmitted to the registered telephone numbers.

Automatic camera selection upon detection of alarm signal

Up to 8 alarm signals can be input into one ALARM IN port. When an alarm signal is input, the system switches to the picture related to the port number which the alarm signal is input.

Features

Up to 64 remote sites can be registered

Up to 64 remote sites can be registered on one Video Transmitter, allowing for a large-scale remote monitoring system.

On-line picture quality adjustment (only for RSE-500)

While watching the picture from a remote site, you can change the picture quality (3 levels) to suit your needs.

Can be added to your existing system

You can easily install the Video Transmitter in an existing system for an enhanced monitoring system.

Password security

You can set a password to secure against unauthorized connection.

RS-232C interface

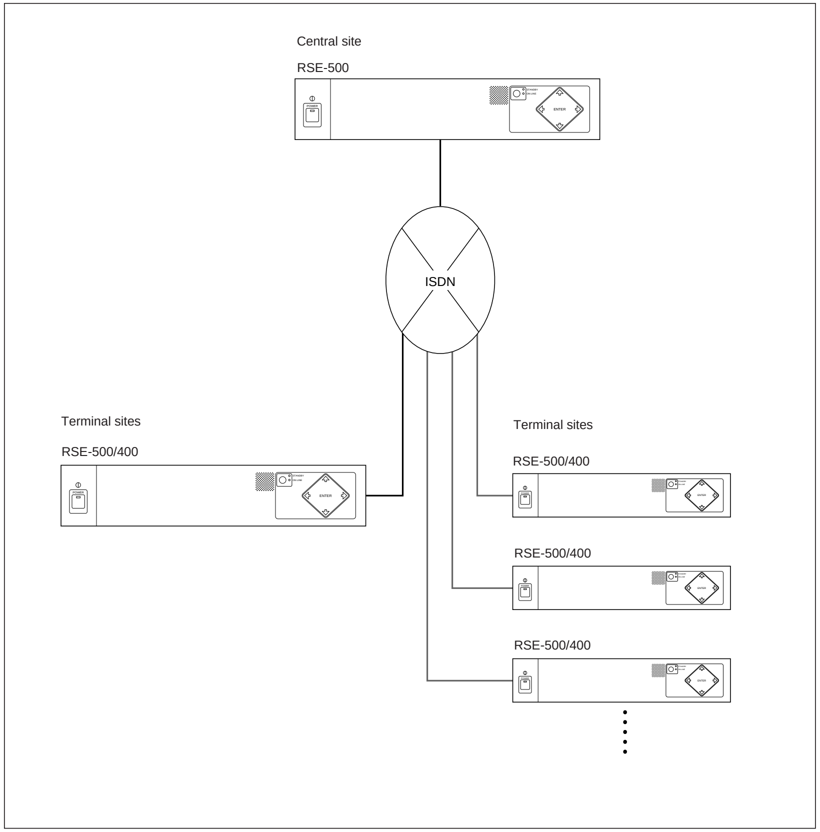
You can connect a computer to the Video Transmitter via RS-232C interface. Controlling the Video Transmitter from the computer enables easy and effective monitoring.

Configuration and Connections

The basic system configuration of the Video Transmitter is shown below.
In normal configuration, it consists of the central and terminal sites. The terminal sites are monitored by the central site.

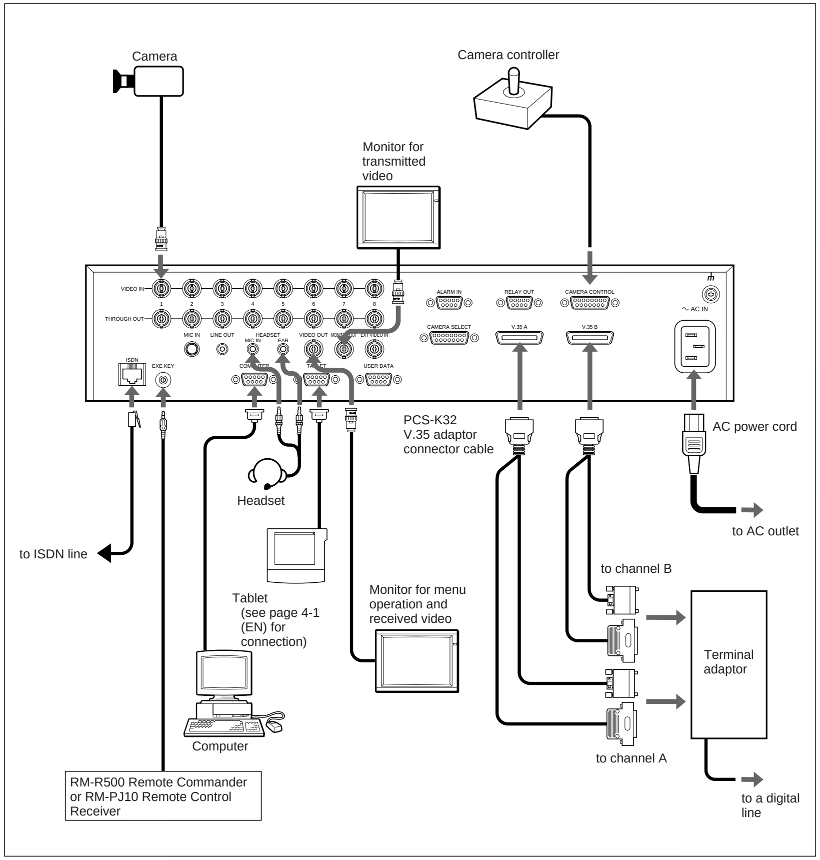
RSE-400 is used only as a terminal site.
RSE-500 can be used as either a central site or a terminal site.

System Configuration



Connections for the Central Site

The basic connections for the central site are shown below. (The illustration below is RSE-500.)

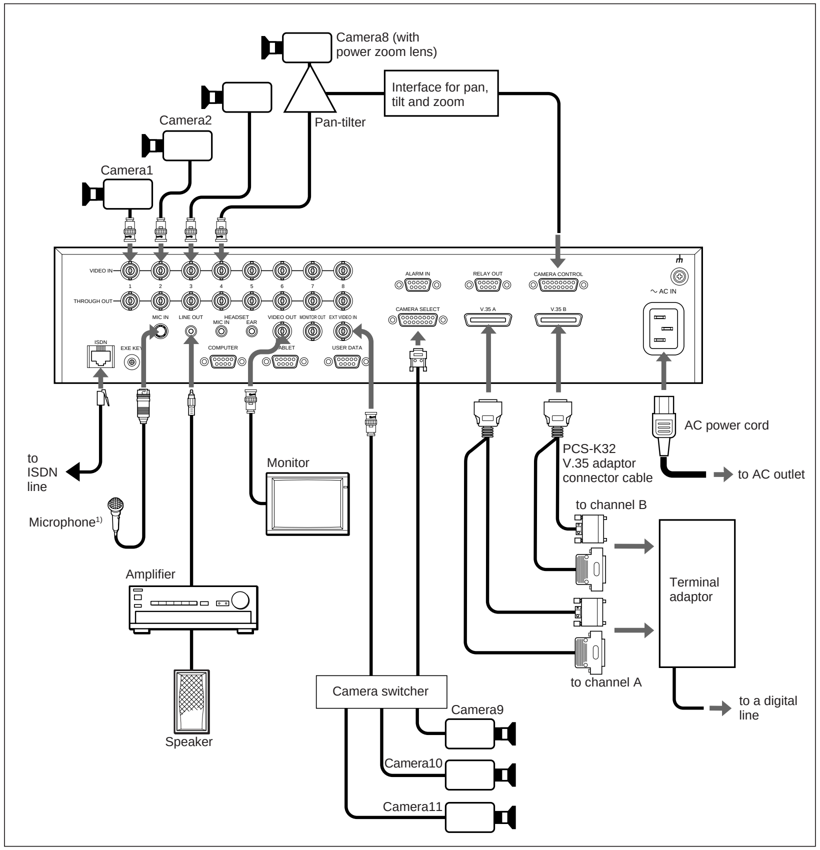

Camera
Camera controller
Monitor for transmitted video
VIDEO IN
THROUGH OUT
MIC IN
LINE OUT
HEADSET
MIC IN
EAR
VIDEO OUT
MONITOR OUT
EXT VIDEO IN
ALARM IN
RELAY OUT
CAMERA CONTROL
CAMERA SELECT
V.35 A
V.35 B
~ AC IN
ISDN
EXE KEY
COMPUTER
TABLET
USER DATA
PCS-K32
V.35 adaptor
connector cable
AC power cord
Headset
to AC outlet
to ISDN line
Tablet
(see page 4-1
(EN) for
connection)
Monitor for menu
operation and
received video
to channel B
Terminal
adaptor
Computer
to channel A
RM-R500 Remote Commander
or RM-PJ10 Remote Control
Receiver
to a digital
line

Note

If your headset jack does not match the Video Transmitter jack, use a plug adaptor (not supplied).

Connections for the Terminal Site

The basic connections for the terminal site are shown below. (The illustration below is RSE-500.)


Camera8 (with
power zoom lens)
Interface for pan,
tilt and zoom
Pan-tilter
Camera2
Camera1
VIDEO IN
THROUGH OUT
MIC IN
LINE OUT
HEADSET
MIC IN
EAR
VIDEO OUT
MONITOR OUT
EXT VIDEO IN
ALARM IN
RELAY OUT
CAMERA CONTROL
CAMERA SELECT
V.35 A
V.35 B
~ AC IN
ISDN
EXE KEY
COMPUTER
TABLET
USER DATA
AC power cord
to ISDN line
Monitor
PCS-K32
V.35 adaptor
connector cable
to AC outlet
Microphone1)
to channel B
Terminal
adaptor
Amplifier
to channel A
Camera switcher
Camera9
to a digital
line
Speaker
Camera10
Camera11

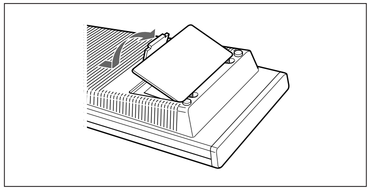
---

1) If you connect the microphone which has an XLR connector to the MIC IN jack, use the following audio conversion cable (not supplied).
- When the microphone has a female connector, use EC-0.4CM (17 $^{3}/_{4}$ inches (45 cm), 4-pin←→XLR (male)).
- When the microphone has a male connector, use EC-0.4CF (17 $^{3}/_{4}$ inches (45 cm), 4-pin←→XLR (female)).

Preparing the Remote Commander (Only for RSE-500)

Inserting the Batteries

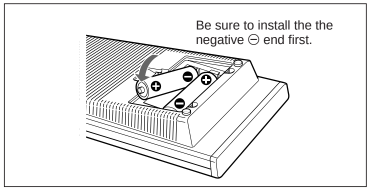
1 Remove the battery cover.



2 Insert two size AA (LR6) alkaline batteries with their polarities correctly aligned.

Caution

Be sure to install the negative ⊖ end of the battery in first. If you place the positive ⊕ end in first, there is a possibility of damaging the insulated film covering the battery and creating a short circuit.



Be sure to install the the negative ⊖ end first.

3 Replace the cover.

Battery life

When the batteries become weak or dead, the Remote Commander does not function.

Notes on batteries

To avoid possible damage from battery leakage or corrosion, observe the following.

- Be sure to insert the batteries in the correct direction.
- Do not mix old and new batteries or different types of batteries.
- Do not attempt to charge dry-cell batteries.
- If you do not intend to use the Remote Commander for a long time, remove the batteries.

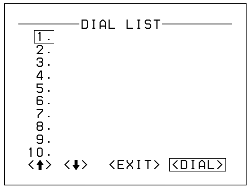
If battery leakage occurs, clean the battery compartment and replace all the batteries.

Turning the Video Transmitter On and Off

Turning the Video Transmitter On

1 Turn on the devices connected to the Video Transmitter.

2 Press the POWER switch.
The Video Transmitter turns on and the POWER lamp (green) lights up.
After the initial screen is displayed, the DIAL LIST menu appears.
You can call the remote sites registered on this DIAL LIST menu.



To go to the main menu

Move the cursor to <EXIT> using ⬅, ⬆, ➡ or ⬇, then press ENTER.

Note

If you are not going to use the unit for a long time, turn off the POWER switch.

Turning the Video Transmitter Off

Press the POWER switch.
The Video Transmitter is turned off and the POWER lamp goes off.

Cautions

- Do not turn off the power when you are setting an item in the SETTING menu. It may damage the registered data.
- The line may not be used temporarily if you turn off the power during communications.

Menus

When you operate the Video Transmitter, display the menu on the monitor.

Note

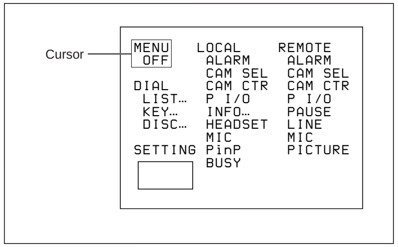
If an item in the menu is dimmed, that means the item cannot be selected.

To display the main menu

To display the main menu, press ENTER on the Video Transmitter or Remote Commander.
If you are using the tablet (WACOM ArtPad[1] II for Windows [2], not supplied), select ENTER on the tablet.

Note

If you have set the main menu not to display, the menu is not displayed even if you press ENTER.
For details, see "Main menu display" on page 2-9 (EN).



Main menu

LOCAL column: contains items which can be set for the local site.
REMOTE column: contains items which can be set for the remote site.

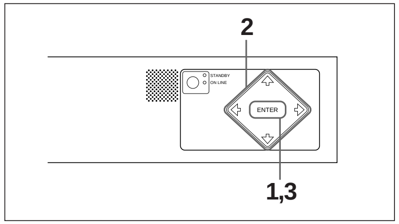
To clear the main menu

Select MENU OFF using ⬅, ⬆, ➡ or ⬇, then press ENTER.
The main menu disappears from the monitor.

Operating the Menu

You can also operate the menu items directly from the Remote Commander or tablet (not supplied).
For details on Remote Commander operation, see pages A-4 (EN) and A-5 (EN), and on tablet operations, see Chapter 4.

Basic menu operations are described below.



1 Press ENTER.
The main menu appears on the monitor.

2 Press ⬅, ⬆, ➡ or ⬇ to move the cursor to the item you want to set.
The selected item becomes highlighted.

3 Press ENTER.
A menu for the selected item appears.

4 Make settings or adjustments on the item.

To cancel the operation

Move the cursor to <CANCEL> and press ENTER.
The operation is canceled.

To correct the characters

Move the cursor to BS (backspace) and press ENTER.
The last character is erased.

To return to the main menu

Move the cursor to <EXIT> and press ENTER.

Operating From a Computer

You can connect a computer to the Video Transmitter and control the Video Transmitter from the computer.
For details on controlling the Video Transmitter from a computer, consult your nearest authorized dealer.

---

1) ArtPad is a registered trademark of WACOM Co., Ltd.
2) Windows is a registered trademark of Microsoft Corporation.

Items in the Main Menu

The main menu items are listed below.
When you turn off the Video Transmitter, all data are reset except for the items in the SETTING menu.

For details on items in the SETTING menu, see “Items in the SETTING Menu” on pages 2-1 (EN) and 2-2 (EN).

Item		Description	Page
MENU OFF		Clears the main menu.	1-7 (EN)
DIAL	LIST...	Connects to a registered remote site.	3-1 (EN)
	KEY...	Connects to an unregistered remote site.	3-2 (EN)
	DISC...	Disconnects the line.	3-3 (EN)
SETTING		Sets the preferences.	Chapter 2
LOCAL	ALARM	Verifies alarm signals and log file input into the local ALARM IN port.	3-8 (EN)
	CAM SEL	Switches the picture of a camera connected to the local site.	3-5 (EN)
	CAM CTR	Controls the cameral controller connected to the local site.	3-6 (EN)
	P I/O	Sets the bit value of the local RELAY OUT port.	3-9 (EN)
	INFO...	Selects the information to superimpose on the screen.	3-7 (EN)
	HEADSET	Selects headset volume.	3-4 (EN)
	MIC	Selects microphone input level.	3-4 (EN)
	PinP a)	Changes the position of the inset window.	3-7 (EN)
	BUSY a)	Makes the line busy temporarily.	3-3 (EN)
REMOTE	ALARM	Verifies alarm signals and log file input into the remote ALARM IN port.	3-8 (EN)
	CAM SEL a)	Switches the picture of a camera connected to the remote site.	3-5 (EN)
	CAM CTR a)	Controls the camera controller connected to the remote site.	3-6 (EN)
	P I/O	Sets the bit value of the remote RELAY OUT port.	3-9 (EN)
	PAUSE	Stops the camera auto scan temporarily.	3-5 (EN)
	LINE	Selects the line volume of the remote site.	3-4 (EN)
	MIC	Selects the microphone input level of the remote site.	3-4 (EN)
	PICTURE a)	Selects picture quality.	3-6 (EN)

a) Only for RSE-500

Chapter 2

Setup Using the SETTING Menu

About the SETTING Menu

You can set the preferences for the Video Transmitter in the SETTING menu.

Items in the SETTING Menu

The SETTING menu list

Item	Description	Page
ID NAME	Registers the ID name.	2-3 (EN)
SITE NAME	Registers the site name.	2-3 (EN)
TELEPHONE#	Registers the telephone number of the local site.	2-3 (EN)
PASSWORD	Sets a password.	2-6 (EN)
LIST (NORMAL)	Registers remote sites. You can connect to a remote site from this menu.	2-15 (EN)
LIST (ALARM)	Registers remote sites to be connected when an alarm signal inputs.	2-16 (EN)
LIST (RECEIVE)	Registers remote sites which have gained access to the local site.	2-17 (EN)
CAMERA	Registers the total number of cameras.	2-13 (EN)
CAMERA AUTO SCAN	Sets the camera auto scan time.	2-14 (EN)
TIME OUT1	Sets the time-out period for the Video Transmitter to disconnect the line.	2-14 (EN)
TIME OUT2	Sets the time-out period for the Video Transmitter to be in the standby mode.	2-14 (EN)
AUDIO MIC LEVEL	Adjusts the line (headset) audio level and microphone input level.	2-7 (EN)
AUDIO-HEADSET	Selects the line (headset) volume. (HIGH/LOW/OFF)	2-8 (EN)
MIC	Selects the microphone input level. (HIGH/LOW/OFF)	2-8 (EN)
RINGER	Sets the ringer on or off.	2-9 (EN)
KEY SOUND	Sets sound on or off when you press the keys.	2-9 (EN)
PICTURE MODEa)	Selects the picture quality.	2-8 (EN)

(Continued)

http://getMANUAL.com

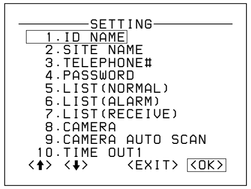
About the SETTING Menu

Item	Description	Page
PinP[a]	Selects the inset window to display or not and selects the position of the inset window.	2-10 (EN)
CALENDAR	Sets the date and time.	2-6 (EN)
MENU	Prevents the unit from displaying the main menu when using ENTER on the Video Transmitter or the enter key on the Remote Commander.	2-9 (EN)
ALARM IN	Writes the comment for the ALARM IN port.	2-10 (EN)
PARALLEL I/O	Writes the comment for the RELAY OUT port.	2-11 (EN)
CAMERA CONTROL	Sets input/output of the CAMERA CONTROL port.	2-11 (EN)
COMPUTER	Sets up the COMPUTER port.	2-11 (EN)
RS-232C 1	Sets up the TABLET port.	2-12 (EN)
RS-232C 2	Sets up the USER DATA port.	2-13 (EN)
VERSION	Displays the software version.	2-9 (EN)
MAINTENANCE	Diagnoses overall system functioning. Sets the second telephone number.	2-18 (EN)
RECEIVE CHECK	Checks whether the incoming call number and the remote site are the same.	2-18 (EN)
DIAG	Diagnoses particular system components.	2-19 (EN)
ANSWERING MODE	Sets the answering mode to auto or manual.	2-7 (EN)
COMMUNICATION MODE	Sets the line rate and the V.35 A/B ports.	2-5 (EN)
BRI MISC	Checks the ISDN interface.	2-21 (EN)

a) Only for RSE-500

Selecting an Item in the SETTING Menu

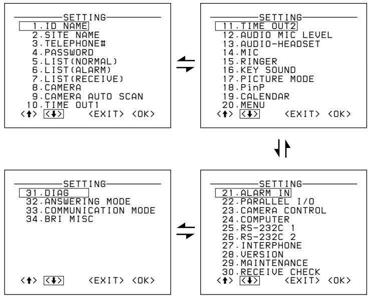
1 Select SETTING from the main menu.
The SETTING menu appears.



```
──────────SETTING──────────
  1.ID NAME
  2.SITE NAME
  3.TELEPHONE#
  4.PASSWORD
  5.LIST(NORMAL)
  6.LIST(ALARM)
  7.LIST(RECEIVE)
  8.CAMERA
  9.CAMERA AUTO SCAN
 10.TIME OUT1
<↑> <↓>       <EXIT> <OK>
```

To move from page to page on the SETTING menu

Move the cursor to <↓> using ←. Each time you press ENTER, the next SETTING menu is displayed.
Move the cursor to <↑> using ←. Each time you press ENTER, the previous SETTING menu is displayed.



```
──────────SETTING──────────
  1.ID NAME
  2.SITE NAME
  3.TELEPHONE#
  4.PASSWORD
  5.LIST(NORMAL)
  6.LIST(ALARM)
  7.LIST(RECEIVE)
  8.CAMERA
  9.CAMERA AUTO SCAN
 10.TIME OUT1
<↑> <↓>    <EXIT> <OK>
```

```
──────────SETTING──────────
 11.TIME OUT2
 12.AUDIO MIC LEVEL
 13.AUDIO-HEADSET
 14.MIC
 15.RINGER
 16.KEY SOUND
 17.PICTURE MODE
 18.PinP
 19.CALENDAR
 20.MENU
<↑> <↓>    <EXIT> <OK>
```

```
──────────SETTING──────────
 21.ALARM IN
 22.PARALLEL I/O
 23.CAMERA CONTROL
 24.COMPUTER
 25.RS-232C 1
 26.RS-232C 2
 27.INTERPHONE
 28.VERSION
 29.MAINTENANCE
 30.RECEIVE CHECK
<↑> <↓>    <EXIT> <OK>
```

```
──────────SETTING──────────
 31.DIAG
 32.ANSWERING MODE
 33.COMMUNICATION MODE
 34.BRI MISC






<↑> <↓>    <EXIT> <OK>
```

2 Select the item to be set using ↑ or ↓, then press ENTER.
The screen with available settings for each item appears.

To return to the main menu

Select <EXIT> using ← or →, then press ENTER.
The main menu appears.

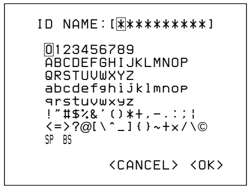
Registering the Local Site Information

Before you use the Video Transmitter, register a site name and telephone number. You can also set a password to deny access to general calling parties other than specific calling parties.

Naming the Video Transmitter (ID Name)

An ID name is used only in system management for commenting purposes. It is not used for communication among Video Transmitter units.

1 Select 1. ID NAME from the SETTING menu.
The following screen appears.



```
ID NAME:[**********]

0123456789
ABCDEFGHIJKLMNOP
QRSTUVWXYZ
abcdefghijklmnop
qrstuvwxyz
!”#$%&’()*+,-.:;¦
<=>?@[\^_]{}~+x/\©
SP BS

         <CANCEL> <OK>
```

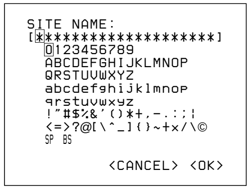
2 Select characters for the ID name using ←, ↑, → or ↓, then press ENTER character by character.
The selected characters are entered in the ID name box.
- The ID name can be up to 10 characters long.
- Select SP for a space.
- An asterisk is displayed where nothing is entered.

3 After entering the ID name, move the cursor to <OK> using ↓, then press ENTER.
The ID name is registered and the SETTING menu appears.

Naming the Video Transmitter (Site Name)

The site name registered at your own site is displayed in the remote site monitor.

1 Select 2. SITE NAME from the SETTING menu.
The following screen appears.



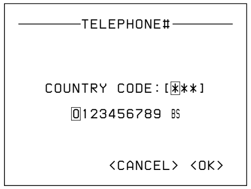
```
SITE NAME:
[********************]
  0123456789
  ABCDEFGHIJKLMNOP
  QRSTUVWXYZ
  abcdefghijklmnop
  qrstuvwxyz
  !”#$%&’()*+,-.:;¦
  <=>?@[\^_]{}~+x/\©
  SP BS

         <CANCEL> <OK>
```

2 Press ↓ and select the characters for the site name using ←, ↑, → or ↓, then press ENTER character by character.
The selected characters are entered in the site name box.
- The site name can be up to 20 characters long.
- Select SP for a space.
- An asterisk is displayed where nothing is entered.

3 After entering the site name, move the cursor to <OK> using ↓, then press ENTER.
The site name is registered and the SETTING menu appears.

Registering the Telephone Number and Subaddress

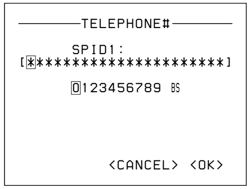
1 Select 3. TELEPHONE # from the SETTING menu.
The following screen appears.



```
─────────TELEPHONE#─────────


  COUNTRY CODE:[***]
     0123456789 BS


         <CANCEL> <OK>
```

2 Select your country code using ← or →, then press ENTER one by one.
The code is entered in the country code box.
- Enter the country code from the left row.
- Do not enter the first or second zero (e.g., enter "1" for the USA or Canada.)
- An asterisk is displayed where nothing is entered.

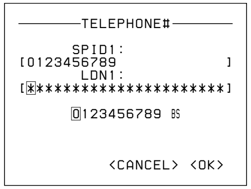
3 After entering the country code, move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
───────TELEPHONE#───────
      SPID1:
[**********************]
      0123456789 BS



          <CANCEL> <OK>
```

4 Select your SPID (service profile identifiers) for B1-channel using ← or →, then press ENTER one by one.
The selected number is entered in the SPID1 box.
- SPID setting is only for users in the USA or Canada.
- An asterisk is displayed where nothing is entered.

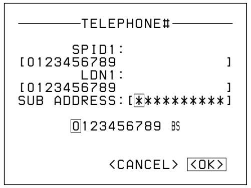
5 After entering the SPID number, move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
───────TELEPHONE#───────
      SPID1:
[0123456789            ]
       LDN1:
[**********************]
      0123456789 BS



          <CANCEL> <OK>
```

6 Select your local directory number for B1-channel using ← or →, then press ENTER one by one.
The selected number is entered in the LDN1 box.
- An asterisk is displayed where nothing is entered.
- Do not enter your area code.

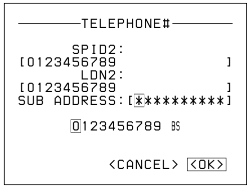
7 After entering the local directory number, move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
───────TELEPHONE#───────
      SPID1:
[0123456789            ]
       LDN1:
[0123456789            ]
SUB ADDRESS:[**********]

      0123456789 BS

          <CANCEL> <OK>
```

8 Enter a subaddress for B1-channel using ← or →, then press ENTER one by one.
The selected number is entered in the subaddress box.
- A subaddress can be up to 10 digits.
- An asterisk is displayed where nothing is entered.

9 After entering the subaddress, move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
───────TELEPHONE#───────
      SPID2:
[0123456789            ]
       LDN2:
[0123456789            ]
SUB ADDRESS:[**********]

      0123456789 BS

          <CANCEL> <OK>
```

10 Repeat steps **4** to **9** to register SPID2, LDN2 and the subaddress for B2-channel.
The setting is registered and the SETTING menu appears.

What's a SPID?

SPIDs are Service Profile Identifiers. SPIDs are used to identify the ISDN device and allow a large uniformity for setting the ISDN device with a switcher.

When the system connects to the following types of network switcher, you can use ISDN lines and will have to register the SPID.
- AT&T 5ESS
  - Network switcher software: 5E8 or later (for National ISDN-1 and National ISDN-2)
- Northern Telecom (NT1) DMS-100
  - Network switcher software: BCS34 or later (for National ISDN-1 and National ISDN-2)

About custom ISDN

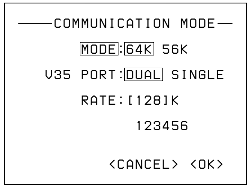
The Vidio Transmitter can communicate with custom ISDN. In such case, please use the following particular country codes.

• AT&T 5ESS Multipoint custom	110
• AT&T 5ESS Point to Point custom	112
• Northern Telecom DMS-100 custom	111

Setting the Communication Mode

When your country or region has a 56 Kbps line rate, set the ISDN line rate.
When you connect via the V.35 interface, set the number of channels and line rate.

1 Select 33. COMMUNICATION MODE from the SETTING menu.
The following screen appears.



```
───COMMUNICATION MODE──
     MODE:64K 56K
 V35 PORT:DUAL SINGLE
     RATE:[128]K
          123456

        <CANCEL> <OK>
```

2 When you connect the remote site via ISDN, select the line rate for sending and receiving using ← or →, then press ↓.
64K: via normal ISDN line.
56K: specific regions or countries with a 56 Kbps ISDN line rate.

3 When you connect the remote site via the V.35 interface, select the number of channels using ← or →, then press ↓.
DUAL: when you use both the CHANNEL A and B ports of the terminal adaptor.
SINGLE: when you use only the CHANNEL A port of the terminal adaptor.

4 Select the line rate of the V.35 interface for receiving using ← or →, then press ↓.
- When you use both the CHANNEL A and B ports of the terminal adaptor, set the line rate to 128 K.
- When you only use the CHANNEL A port of the terminal adaptor, set the line rate between 64 and 384 K.

5 After entering the line rate, move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

Registering the Local Site Information

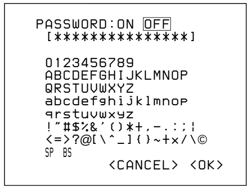
Notes

- When you connect via the V.35 interface, the terminal adaptor is required.
- When you connect via the V.35 interface, you need to set the line rates of the calling party and called party to the same rate.
- Turn on the terminal adaptor after turning on the Video Transmitter.

Setting the Password

You can set a password for security purposes. (If you do not set a password, you can connect to video-conference.)
When a remote party which does not know the password tries to connect to the local site, the line may be connected temporarily and the local picture and audio may be sent to the remote party. If you reject the communications other than specific parties, use the LIST (RECEIVE) menu and register the parties to permit the communications.

1. Select 4. PASSWORD from the SETTING menu.
   The following screen appears.

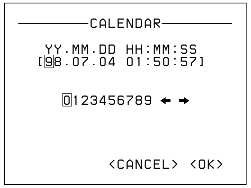


```
PASSWORD:ON [OFF]
 [***************]

 0123456789
 ABCDEFGHIJKLMNOP
 QRSTUVWXYZ
 abcdefghijklmnop
 qrstuvwxyz
 !"#$%&'()*+,-.:;|
 <=>?@[\^_]{}~+x/\©
 SP  BS
          <CANCEL> <OK>
```

2. Select ON or OFF using ← or → to determine whether to set a password or not, then press ↓.
   ON: Sets the password.
   OFF: Does not set the password, but you can still register a password.
3. Select characters for the password using ←, ↑, → or ↓, then press ENTER character by character.
   The selected characters are entered in the password box.
   - The password can be up to 15 characters long.
   - Select SP for a space.
   - An asterisk is displayed where nothing is entered.
4. After entering the password, move the cursor to <OK> using ↓, then press ENTER.
   The password is registered and the SETTING menu appears.

Setting the Date and Time

1. Select 19. CALENDAR from the SETTING menu.
   The following screen appears.



```
──────CALENDAR──────
 YY.MM.DD HH:MM:SS
[[9]8.07.04 01:50:57]

  [0]123456789 ← →


        <CANCEL> <OK>
```

2. If you set all the date and time, go to Step **3**.
   To select the item of date or time you want to set, select ← or → using the ← or → key and press ENTER repeatedly to move the cursor.
   The cursor moves among the date (YY.MM.DD) and time (HH:MM:SS) cyclically.

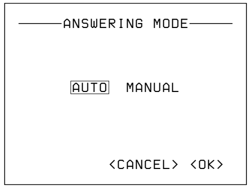
YY	MM	DD	HH	MM	SS
Year	Month	Date	Hour	Minute	Second

3. Select a number using ← or →, then press ENTER.
   The selected number is entered in the box and the cursor moves to the right.
4. Repeat Steps **2** and **3** to enter the date and time.
5. After entering the date and time, move the cursor to <OK> using ↓, then press ENTER.
   The date and time are set and the SETTING menu appears.

Setting the Answering Mode

You can set the answering mode to receive an incoming call automatically or manually.

1. Select 32. ANSWERING MODE from the SETTING menu.
   The following screen appears.



```
────ANSWERING MODE────


    [AUTO]  MANUAL



          <CANCEL> <OK>
```

2. Select AUTO or MANUAL using ← or →.
   The selected setting becomes highlighted.
   AUTO: Receives an incoming call automatically.
   MANUAL: Before receiving an incoming call, the message "There is an incoming video call..." appears on the monitor. If you want to receive that call, press ENTER.
3. Move the cursor to <OK> using ↓, then press ENTER.
   The setting is registered and the SETTING menu appears.

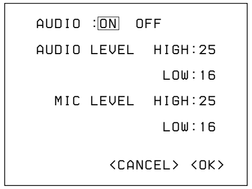
Basic Setting

This section describes the basic settings of the Video Transmitter.

Adjusting the Line (Headset) Audio Level and the Microphone Input Level

You can register the line (headset) audio level and microphone input level in the HIGH and the LOW positions.
If you set AUDIO to OFF, the capacity allocated to the audio signal is allocated to the video signal. In this case, the picture quality improves.

1. Select 12. AUDIO MIC LEVEL from the SETTING menu.
   The following screen appears.



```
AUDIO :[ON]  OFF

AUDIO LEVEL  HIGH:25

              LOW:16

  MIC LEVEL  HIGH:25

              LOW:16


       <CANCEL> <OK>
```

2. Select ON or OFF using ← or →, then press ↓.
3. Adjust the audio level in the HIGH position using ← or →.
   You can adjust the audio level between 01 and 32.
4. Move the cursor to AUDIO LEVEL LOW using ↓, then adjust the audio level in the LOW position using ← or →.
   You can adjust the audio level between 01 and 32.
5. Move the cursor to MIC LEVEL HIGH using ↓, then adjust the microphone input level in the HIGH position using ← or →.
   You can adjust the microphone input level between 01 and 32.
6. Move the cursor to MIC LEVEL LOW using ↓, then adjust the microphone input level in the LOW position using ← or →.
   You can adjust the microphone input level between 01 and 32.

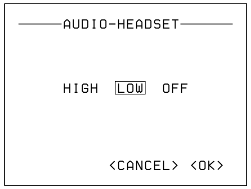
7 Move the cursor to <OK> using ↓, then press ENTER.
The audio level and microphone input level are set and the SETTING menu appears.

Note

If you set a low level in the HIGH position and a high level in the LOW position, low level is output (or input) regardless of selecting HIGH and high level is output (or input) regardless of selecting LOW.

Selecting the Line (Headset) Volume

1 Select 13. AUDIO-HEADSET from the SETTING menu.
The following screen appears.



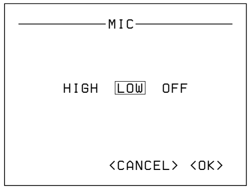
```
——AUDIO-HEADSET——

   HIGH [LOW] OFF

        <CANCEL> <OK>
```

2 Select HIGH, LOW or OFF using ← or →.
The selected setting becomes highlighted.
HIGH: The volume is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
LOW: The volume is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF: Sound is muted.

3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

Selecting the Microphone Input Level

1 Select 14. MIC from the SETTING menu.
The following screen appears.



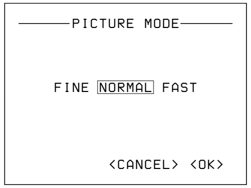
```
————MIC————

   HIGH [LOW] OFF

        <CANCEL> <OK>
```

2 Select HIGH, LOW or OFF using ← or →.
The selected setting becomes highlighted.
HIGH: The input level is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
LOW: The input level is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF: No sound is input.

3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

Selecting the Picture Quality

1 Select 17. PICTURE MODE from the SETTING menu.
The following screen appears.



```
———PICTURE MODE———

  FINE [NORMAL] FAST

        <CANCEL> <OK>
```

2 Select the picture quality using ← or →.
The selected setting becomes highlighted.
FINE: Gives picture quality preference than picture motion.
NORMAL: Middle setting between FINE and FAST.
FAST: Gives picture motion preference than picture quality.

3 Move the cursor to <OK> using ↓, then press ENTER.
The picture quality is set and the SETTING menu appears.

Other Settings

Ringer

You can set the ringer sound on or off.
Select 15. RINGER from the SETTING menu and select ON or OFF using ← or →.
ON: Ringer is turned on.
OFF: Ringer is turned off.

Move the cursor to <OK> using ↓ and press ENTER.
The setting is registered and the SETTING menu appears.

Key sound

You can make a sound when you press a key.
Select 16. KEY SOUND from the SETTING menu and select ON or OFF using ← or →.
ON: Key sound is turned on.
OFF: Key sound is turned off.

Move the cursor to <OK> using ↓ and press ENTER.
The setting is registered and the SETTING menu appears.

Main menu display

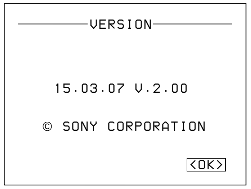
You can set the unit to prevent it from displaying the main menu when ENTER on the Video Transmitter or the enter key on the Remote Commander is pressed.
Select 20. MENU from the SETTING menu and select ON or OFF using ← or →.
ON: Main menu is displayed.
OFF: Main menu is not displayed.

Move the cursor to <OK> using ↓ and press ENTER.
The setting is registered and the SETTING menu appears.

To display the software version

You can check the software version.

1 Select 28. VERSION from the SETTING menu.
The following screen appears.



```
————VERSION————

   15.03.07 V.2.00

  © SONY CORPORATION

                [<OK>]
```

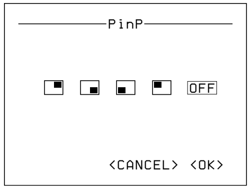
2 After checking the software version, press ENTER.
The SETTING menu appears.

Inset Window Setting

You can set the unit to display the inset window and select the corner in which the inset window appears on.

Selecting the Position of the Inset Window

1 Select 18. PinP from the SETTING menu.
The following screen appears.



2 Select the position of the inset window using ← or →.
The selected setting becomes highlighted.

- ◳**:** The inset window is displayed in the upper-right corner.
- ◲**:** The inset window is displayed in the lower-right corner.
- ◱**:** The inset window is displayed in the lower-left corner.
- ◰**:** The inset window is displayed in the upper-left corner.

OFF: The inset window is not displayed.

3 Move the cursor to <OK> using ↓, then press ENTER.
The inset window position is set and the SETTING menu appears.

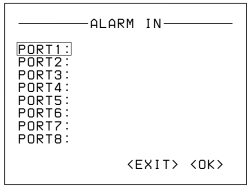
Port Setting

This section describes how to set the ALARM IN, RELAY OUT, CAMERA CONTROL, COMPUTER, TABLET, USER DATA ports.

Setting Up the ALARM IN Port

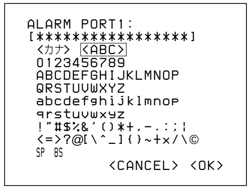
You can write comments for the ALARM IN port to identify what is connected to each port.

1 Select 21. ALARM IN from the SETTING menu.
The following screen appears.



```
————ALARM IN————
PORT1:
PORT2:
PORT3:
PORT4:
PORT5:
PORT6:
PORT7:
PORT8:
           <EXIT> <OK>
```

2 Select the port number (PORT1 – 8) using ↑ or ↓, then press ENTER.
The following screen appears.



```
ALARM PORT1:
[*****************]
 <カナ> <ABC>
 0123456789
 ABCDEFGHIJKLMNOP
 QRSTUVWXYZ
 abcdefghijklmnop
 qrstuvwxyz
 !"#$%&'()*+,-.:;¦
 <=>?@[\^_]{}~+x/\©
 SP BS
          <CANCEL> <OK>
```

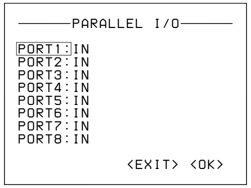
3 Press ↓ and select characters using ←, ↑, → or ↓, then press ENTER character by character.
Selected characters are entered in the box.
- A comment can be up to 17 characters long.
- Select SP for spaces.
- An asterisk is displayed where nothing is entered.

4 After writing a comment, move the cursor to <OK> using ↓, then press ENTER.
The comment is registered and the SETTING menu appears.

Setting Up the RELAY OUT Port

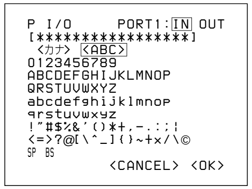
You can select input or output for the RELAY OUT port and write comments for the port to identify what is connected to each port.

1 Select 22. PARALLEL I/O from the SETTING menu.
The following screen appears.



```
————PARALLEL I/O————
PORT1:IN
PORT2:IN
PORT3:IN
PORT4:IN
PORT5:IN
PORT6:IN
PORT7:IN
PORT8:IN
           <EXIT> <OK>
```

2 Select the port number (PORT1 – 8) using ↑ or ↓, then press ENTER.
The following screen appears.



```
P I/O      PORT1:IN OUT
[*****************]
 <カナ> <ABC>
0123456789
ABCDEFGHIJKLMNOP
QRSTUVWXYZ
abcdefghijklmnop
qrstuvwxyz
!"#$%&'()*+,-.:;¦
<=>?@[\^_]{}~+x/\©
SP BS
         <CANCEL> <OK>
```

3 Select IN or OUT using ← or →, then press ↓.
The cursor moves to <ABC>.

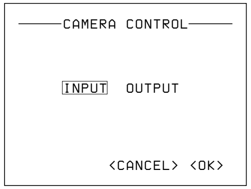
4 Press ↓ and select characters using ←, ↑, → or ↓, then press ENTER character by character.
Selected characters are entered in the box.
- A comment can be up to 17 characters long.
- Select SP for a space.
- An asterisk is displayed where nothing is entered.

5 After writing a comment, move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

Setting Up the CAMERA CONTROL Port

You can select input or output of the CAMERA CONTROL port.

1 Select 23. CAMERA CONTROL from the SETTING menu.
The following screen appears.



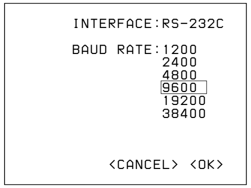
```
————CAMERA CONTROL————

    INPUT  OUTPUT

         <CANCEL> <OK>
```

2 Select INPUT or OUTPUT using ← or →.

3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

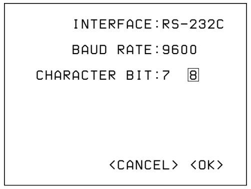
Setting Up the COMPUTER Port

1 Select 24. COMPUTER from the SETTING menu.
The following screen appears.



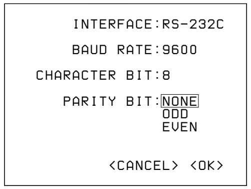
```
  INTERFACE:RS-232C

  BAUD RATE:1200
            2400
            4800
            9600
            19200
            38400

         <CANCEL> <OK>
```

2 Select the baud rate using ↑ or ↓, then press ENTER.
The following screen appears.



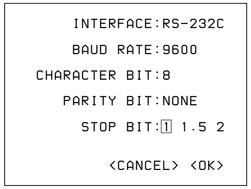
```
      INTERFACE:RS-232C
      BAUD RATE:9600
 CHARACTER BIT:7  8

          <CANCEL> <OK>
```

3 Select the character bit using ← or →, then press ENTER.
The following screen appears.



```
      INTERFACE:RS-232C
      BAUD RATE:9600
 CHARACTER BIT:8
     PARITY BIT:NONE
                ODD
                EVEN

          <CANCEL> <OK>
```

4 Select the parity bit using ↑ or ↓, then press ENTER.
The following screen appears.

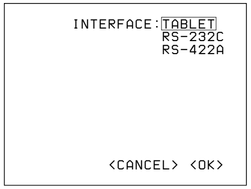


```
      INTERFACE:RS-232C
      BAUD RATE:9600
 CHARACTER BIT:8
     PARITY BIT:NONE
       STOP BIT:1 1.5 2

          <CANCEL> <OK>
```

5 Select the stop bit using ← or →, then press ENTER.
The setting is registered and the SETTING menu appears.

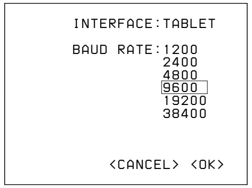
Setting Up the TABLET Port

1 Select 25. RS-232C 1 from the SETTING menu.
The following screen appears.



```
      INTERFACE:TABLET
                RS-232C
                RS-422A

          <CANCEL> <OK>
```

2 Select the interface using ↑ or ↓, then press ENTER.
If you are using the tablet (WACOM ArtPad II for Windows, not supplied), select TABLET.
The following screen appears.



```
      INTERFACE:TABLET
      BAUD RATE:1200
                2400
                4800
                9600
                19200
                38400

          <CANCEL> <OK>
```

3 Select the baud rate using ↑ or ↓, then press ENTER.

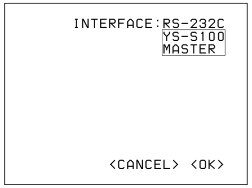
4 Select the character bit using ← or →, then press ENTER.

5 Select the parity bit using ↑ or ↓, then press ENTER.

6 Select the stop bit using ← or →, then press ENTER.
The setting is registered and the SETTING menu appears.

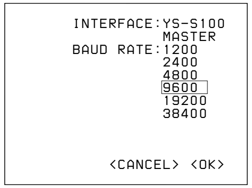
Setting Up the USER DATA Port

1 Select 26. RS-232C 2 from the SETTING menu.
The following screen appears.



```
      INTERFACE:RS-232C
                YS-S100
                MASTER

          <CANCEL> <OK>
```

2 Select the interface using ↑ or ↓, then press ENTER.
If you are using the YS-S100 Camera Switcher (not supplied), select YS-S100 MASTER.
The following screen appears.



```
      INTERFACE:YS-S100
                MASTER
      BAUD RATE:1200
                2400
                4800
                9600
                19200
                38400

          <CANCEL> <OK>
```

3 Select the baud rate using ↑ or ↓, then press ENTER.

4 Select the character bit using ← or →, then press ENTER.

5 Select the parity bit using ↑ or ↓, then press ENTER.

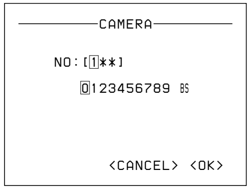
6 Select the stop bit using ← or →, then press ENTER.
The setting is registered and the SETTING menu appears.

Registering the Number of Cameras

You need to register the number of cameras (up to 256) connected to the Video Transmitter to monitor all of the camera pictures. You cannot switch to all of the pictures if you don't register the number of cameras.

Registering the Number of Cameras Connected to the Video Transmitter

1 Select 8. CAMERA from the SETTING menu.
The following screen appears.



```
  ---------CAMERA---------

     NO:[1**]
        0123456789 BS

          <CANCEL> <OK>
```

2 Select the number of cameras connected to the Video Transmitter using ← or →, then press ENTER.
The selected number is entered in the box.
• An asterisk is displayed where nothing is entered.

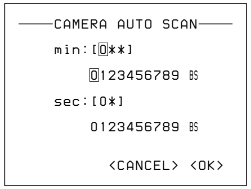
3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

Switching Pictures Automatically

You can automatically switch among the pictures (up to 256 cameras) at regular intervals.

Setting the Time When the Pictures are Switched

1 Select 9. CAMERA AUTO SCAN from the SETTING menu.
The following screen appears.



```
——CAMERA AUTO SCAN——
   min:[0**]
        0123456789 BS
   sec:[0*]
        0123456789 BS

            <CANCEL> <OK>
```

2 Select the minutes using ← or →, then press ENTER one by one.
The selected number is entered in the minutes box.
Press ↓ and select the seconds using ← or →, then press ENTER one by one.
The selected number is entered in the seconds box.
- An asterisk is displayed where nothing is entered.
- If you select 0 for minutes and seconds, the pictures are not switched automatically.

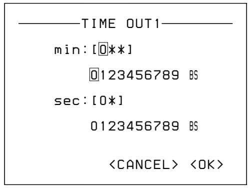
3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

Disconnecting From the Line Automatically/Turning to the Standby Mode Automatically

You can set the system to disconnect the line automatically or turn to standby mode automatically to save power.

Setting the Time When the Unit Disconnects From the Line or Turning to the Standby Mode

1 To set the time when the unit disconnects from the line, select 10. TIME OUT 1 from the SETTING menu.
To set the time when the unit turns to the standby mode, select 11. TIME OUT 2 from the SETTING menu.
The following screen appears. (The illustration below is for selecting 10. TIME OUT 1.)



```
————TIME OUT1————
   min:[0**]
        0123456789 BS
   sec:[0*]
        0123456789 BS

            <CANCEL> <OK>
```

2 Select the minutes using ← or →, then press ENTER one by one.
The selected number is entered in the minutes box.
Press ↓ and select the seconds using ← or →, then press ENTER one by one.
The selected number is entered in the seconds box.
- An asterisks is displayed where nothing is entered.
- If you select 0 for minutes and seconds, the unit does not automatically disconnect from the line or turn to the standby mode.

3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

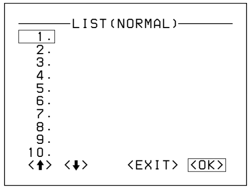
To turn on the power from the standby mode
- Press any key on the Video Transmitter or Remote Commander.
- Select any location on the tablet (not supplied).

Registering Called Parties

To connect from the LIST (NORMAL) menu, you need to register each party you want to connect with. You can register up to 64 sites.

Registering Your Called Party Information

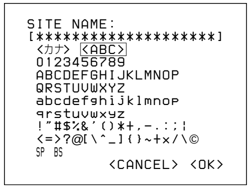
1 Select 5. LIST (NORMAL) from the SETTING menu.
The LIST (NORMAL) menu appears.



```
————LIST(NORMAL)————
  1.
  2.
  3.
  4.
  5.
  6.
  7.
  8.
  9.
 10.
 <↑> <↓>    <EXIT> <OK>
```

To move from page to page on the LIST (NORMAL) menu
Move the cursor to <↓> using ←. Each time you press ENTER, the next LIST (NORMAL) menu is displayed.
Move the cursor to <↑> using ←. Each time you press ENTER, the previous LIST (NORMAL) menu is displayed.

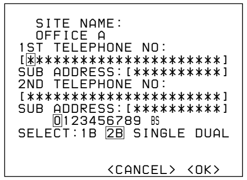
2 Select the list number to register a called party using ↑ or ↓, then press ENTER.
The following screen appears.



```
SITE NAME:
[********************]
 <カナ> <ABC>
 0123456789
 ABCDEFGHIJKLMNOP
 QRSTUVWXYZ
 abcdefghijklmnop
 qrstuvwxyz
 !"#$%&'()*+,-.:;¦
 <=>?@[\^_]{}~+x/\©
 SP BS
          <CANCEL> <OK>
```

3 Press ↓ and select the site name using ← or →, then press ENTER character by character.
The selected characters are entered in the site name box.
- A site name can be up to 20 characters long.
- Select SP for spaces.
- An asterisk is displayed where nothing is entered.

4 Move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
  SITE NAME:
  OFFICE A
1ST TELEPHONE NO:
[**********************]
SUB ADDRESS:[**********]
2ND TELEPHONE NO:
[**********************]
SUB ADDRESS:[**********]
    0123456789 BS
SELECT:1B 2B SINGLE DUAL


          <CANCEL> <OK>
```

5 Enter the telephone number for B1-channel using ← or →, then press ENTER one by one.
The selected numbers are entered in the first telephone number box.
- A telephone number can be up to 22 digits.
- An asterisk is displayed where nothing is entered.

6 Press ↓ and enter the subaddress for B1-channel using ← or →, then press ENTER one by one.
The selected numbers are entered in the subaddress box.
- Subaddress can be up to 10 digits.
- An asterisk is displayed where nothing is entered.

7 Press ↓ and repeat steps **5** and **6** to register the telephone number and subaddress for B2-channel.

8 Press ↓ and select the transmission rate (via an ISDN line from 1B or 2B, via the V.35 interface from SINGLE or DUAL) using ← or →, then press ENTER.
The setting is registered and the LIST (NORMAL) menu appears.

Note

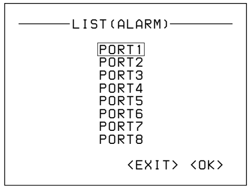
The subaddress function may not be worked properly depending on types of switchboards.

Registering Called Parties When an Alarm Signal Is Input

You can register up to 10 called parties for one port number of the ALARM IN port when an alarm signal is input. If an alarm signal is input, the unit calls these parties automatically.

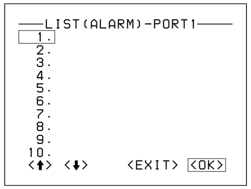
Registering Your Called Party Information

1 Select 6. LIST (ALARM) from the SETTING menu.
The LIST (ALARM) menu appears.



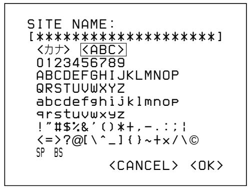
```
————LIST(ALARM)————
        PORT1
        PORT2
        PORT3
        PORT4
        PORT5
        PORT6
        PORT7
        PORT8

            <EXIT> <OK>
```

2 Select the port number (PORT 1 – 8) using ↑ or ↓, then press ENTER.
The following screen appears.



```
——LIST(ALARM)-PORT1———
  1.
  2.
  3.
  4.
  5.
  6.
  7.
  8.
  9.
 10.
<↑> <↓>    <EXIT> <OK>
```

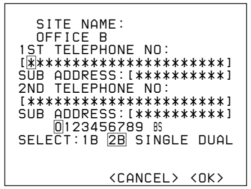
3 Select the list number (1 – 10) to register the called party using ↑ or ↓, then press ENTER.
The following screen appears.



```
SITE NAME:
[********************]
 <カナ> <ABC>
 0123456789
 ABCDEFGHIJKLMNOP
 QRSTUVWXYZ
 abcdefghijklmnop
 qrstuvwxyz
 !"#$%&'()*+,-.:;¦
 <=>?@[\^_]{}~+x/\©
 SP BS
          <CANCEL> <OK>
```

4 Press ↓ and select the site name using ← or →, then press ENTER character by character.
The selected characters are entered in the site name box.
- A site name can be up to 20 characters long.
- Select SP for a space.
- An asterisk is displayed where nothing is entered.

5 Move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
  SITE NAME:
  OFFICE B
1ST TELEPHONE NO:
[**********************]
SUB ADDRESS:[**********]
2ND TELEPHONE NO:
[**********************]
SUB ADDRESS:[**********]
    0123456789 BS
SELECT:1B 2B SINGLE DUAL


          <CANCEL> <OK>
```

6 Enter the telephone number for B1-channel using ← or →, then press ENTER one by one.
The selected numbers are entered in the first telephone number box.
- A telephone number can be up to 22 digits.
- An asterisk is displayed where nothing is entered.

7 Press ↓ and enter the subaddress for B1-channel using ← or →, then press ENTER.
The selected numbers are entered in the subaddress box.
- A telephone number can be up to 10 digits.
- An asterisk is displayed where nothing is entered.

8 Press ↓ and repeat steps **6** and **7** to register the telephone number and subaddress for B2-channel.

9 Press ↓ and select the transmission rate (via an ISDN line from 1B or 2B, via the V.35 interface from SINGLE or DUAL) using ← or →, then press ENTER.
The setting is registered and the LIST (ALARM) menu appears.

Note

The subaddress function may not be worked properly depending on types of switchboards.

Registering Calling Parties with Permission to Be Connected

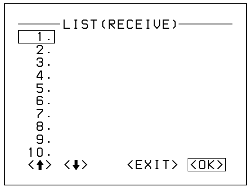
You can register up to 128 calling parties with permission to be connected.

Note

This function may not be worked properly depending on types of switchboards.

Registering Your Calling Party Information

1 Select 7. LIST (RECEIVE) from the SETTING menu.
The LIST (RECEIVE) menu appears.

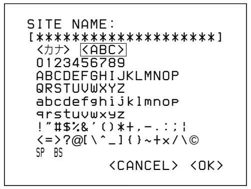


```
————LIST(RECEIVE)————
  1.
  2.
  3.
  4.
  5.
  6.
  7.
  8.
  9.
 10.
<↑> <↓>    <EXIT> <OK>
```

To move from page to page on the LIST (RECEIVE) menu

Move the cursor to <↓> using ←. Each time you press ENTER, the next LIST (RECEIVE) menu is displayed.
Move the cursor to <↑> using ←. Each time you press ENTER, the previous LIST (RECEIVE) menu is displayed.

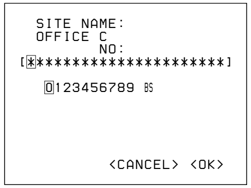
2 Select the list number to register the calling party using ↑ or ↓, then press ENTER.
The following screen appears.



```
SITE NAME:
[********************]
 <カナ> <ABC>
 0123456789
 ABCDEFGHIJKLMNOP
 QRSTUVWXYZ
 abcdefghijklmnop
 qrstuvwxyz
 !"#$%&'()*+,-.:;¦
 <=>?@[\^_]{}~+x/\©
 SP BS
          <CANCEL> <OK>
```

3 Press ↓ and select the site name using ← or →, then press ENTER character by character.
The selected characters are entered in the site name box.
- The site name can be up to 20 characters long.
- Select SP for spaces.
- An asterisk is displayed where nothing is entered.

4 Move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
  SITE NAME:
  OFFICE C
        NO:
[**********************]

   0123456789 BS




          <CANCEL> <OK>
```

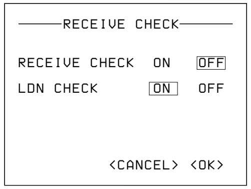
5 Enter the telephone number using ← or →, then press ENTER one by one.
The selected numbers are entered in the telephone number box.
- A telephone number can be up to 22 digits.
- An asterisk is displayed where nothing is entered.
- When you connect at 2B transmission rate, enter the telephone number for B1-channel.

6 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the LIST (RECEIVE) menu appears.

Checking the Calling Party or Called Party Number

You can check a call against the numbers registered on the LIST (RECEIVE) menu. If you set RECEIVE CHECK to ON, the unit cannot receive any calls other than from the registered numbers.
If you set LDN CHECK to ON, the unit checks a called party number against your local directory number.

1 Select 30. RECEIVE CHECK from the SETTING menu.
The following menu appears.



```
───RECEIVE CHECK───

RECEIVE CHECK   ON   [OFF]
LDN CHECK      [ON]   OFF


             <CANCEL> <OK>
```

2 Select receive check ON or OFF using ← or →, then press ↓.

3 Select LDN check ON or OFF using ← or →, then press ↓.

4 Press ENTER.
The setting is registered and the main menu appears.

Note

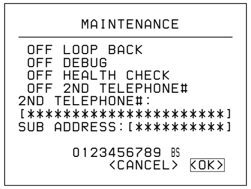
If you cannot receive a call, set LDN CHECK to OFF.

Diagnosing the System

You can diagnose the Video Transmitter system. The diagnostics are executed by looping back the audio/video signals and serial data.

Setting the Loop Back and Debugging

1 Select 29. MAINTENANCE from the SETTING menu.
The following screen appears.



```
      MAINTENANCE
 ─────────────────────────
 OFF LOOP BACK
 OFF DEBUG
 OFF HEALTH CHECK
 OFF 2ND TELEPHONE#
2ND TELEPHONE#:
[************************]
SUB ADDRESS:[***********]

      0123456789 BS
         <CANCEL> [<OK>]
```

2 Select loop back ON or OFF using ← or →, then press ↓.

3 Select debugging ON or OFF using ← or →, then press ↓ three times.

4 Press ENTER.
The setting is registered.

When LOOP BACK is set to ON

The analog video input signal from the camera is digitized and encoded when you call through the DIAL LIST menu. This signal is looped back and decoded before sending it via ISDN. This decoded signal is displayed on the monitor after converting to an analog signal.

When DEBUG is set to ON

The ISDN line connection status is output to the USER DATA port.

When HEALTH CHECK is set to ON

When the devices at remote site do not shut down properly, such as disconnect the line before turning off the devices, or error occurred in ISDN lines, disconnect the line properly.

Note

The health check does not function when the local Video Transmitter turns off the power before disconnecting the line.

To cancel diagnostics

Set LOOP BACK and DEBUG to OFF. Move the cursor to <EXIT> and press ENTER. Diagnostics are canceled and the main menu appears.

Setting a Different Telephone Number for B2-channel for Maintenance

1 Select 29. MAINTENANCE from the SETTING menu.

2 Press ↓ three times.

3 Set 2ND TELEPHONE# to ON using ← or →, then press ENTER.

4 Select the second telephone number of the remote site using ← or →, then press ENTER one by one.
The second telephone number is entered in the second telephone number box.
- An asterisk is displayed where nothing is entered.

5 After entering the second telephone number, move the cursor to <OK> using ↓, then press ENTER.

6 Select the second subaddress of the remote site using ← or →, then press ENTER one by one.
The second subaddress is entered in the second subaddress box.
- An asterisk is displayed where nothing is entered.

7 After entering the subaddress, move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

Diagnosing the Hardware

Note

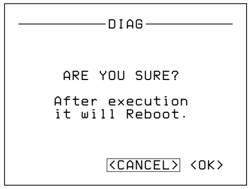
After executing diagnostics, all settings are reset to the same state as when the power is turned on except for the items in the SETTING menu.

Audio and video signals diagnostics

Notes

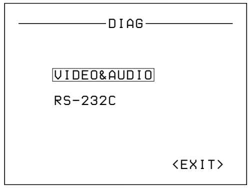
- For a video signal loop back, you need a camera and a monitor.
- For an audio signal loop back, you need a headset.

1 Select 31. DIAG from the SETTING menu.
The following screen appears.



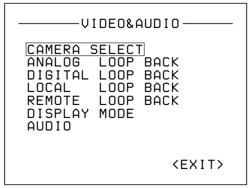
```
──────DIAG──────


   ARE YOU SURE?

   After execution
   it will Reboot.


       [<CANCEL>] <OK>
```

2 Select <OK> using →, then press ENTER.
The following screen appears.



```
──────DIAG──────


   [VIDEO&AUDIO]

   RS-232C


            <EXIT>
```

3 Select VIDEO & AUDIO, then press ENTER.
The following screen appears.



```
────VIDEO&AUDIO────

 [CAMERA SELECT]
 ANALOG  LOOP BACK
 DIGITAL LOOP BACK
 LOCAL   LOOP BACK
 REMOTE  LOOP BACK
 DISPLAY MODE
 AUDIO


            <EXIT>
```

4 Select an item to diagnose using ↑ or ↓, then press ENTER.
The hardware self-diagnostic starts.

Note

After executing the LOCAL LOOP BACK diagnostic, the DIGITAL LOOP BACK diagnostic cannot be executed.

Items checked when the Video Transmitter is off-line

Item	Normal result
CAMERA SELECT	Changes the input signal and displays it on the monitor to diagnose the video signal I/O and the video switch. You can connect the monitor to either the VIDEO OUT connector or MONITOR OUT connector. Selected camera picture is displayed. If you select a port into which no video signal is input, there is no synchronization and nothing is displayed on the monitor.
ANALOG LOOP BACK	Displays the analog video signals on the monitor.
DIGITAL LOOP BACK	Displays the video signals which are converted to digital and then converted to analog again (compared to the analog signals, they are rough.)
LOCAL LOOP BACK	Displays the video signals which are encoded and decoded (compared to the digital signals, they appear frame by frame.)
DISPLAY MODE	Displays only character information or only input video signals. Each time you press ENTER, the screen changes between character information without picture and superimposed picture.
AUDIO	Outputs the audio signals input from the microphone to the headset or the line output.

Item checked when the Video Transmitter is on-line

Item	Normal result
REMOTE LOOP BACK	Displays the same status as LOCAL LOOP BACK above. REMOTE LOOP BACK is executed when it is on-line. After executing REMOTE LOOP BACK, the line is disconnected automatically and the unit returns to the same state as when the power is turned on.

To cancel the diagnostics

Move the cursor to <EXIT> and press ENTER. The data except for the SETTING menu are reset to the same state as when the power is turned on.

Serial data diagnostics

To check serial data, connect the loop back connector to the COMPUTER port, TABLET port and USER DATA port and diagnose by looping back the data sent from the Video Transmitter.
If you connect a loop back connector to a remote site when it is on-line, you can check the remote site during data transmission. If you connect a loop back connector to the local site when it is off-line, you can check the local site.

Notes

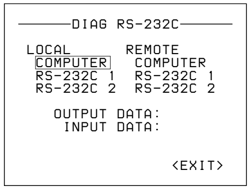
- To loop back serial data, you need a shorted loop back connector for pins 2 and 3, pins 4 and 6, and pins 7 and 8.
- A serial data loop back is done in RS-232C mode.

For details on pin assignment, see “Pin Assignment” on pages A-9 (EN) to A-11 (EN).

1 Select 31. DIAG from the SETTING menu.
The following screen appears.

2 Select <OK> using ➡, then press ENTER.
The following screen appears.

3 Select RS-232C using ⬇, then press ENTER.
The following screen appears.



```
───────DIAG RS-232C──────

 LOCAL       REMOTE
  COMPUTER    COMPUTER
  RS-232C 1   RS-232C 1
  RS-232C 2   RS-232C 2

    OUTPUT DATA:
      INPUT DATA:

                   <EXIT>
```

4 Select an item to check using ⬅, ⬆, ➡ or ⬇ then press ENTER.
The system starts diagnostics.
When the hardware is functioning correctly, the system displays OK.

To cancel the diagnostics

Move the cursor to <EXIT> and press ENTER. The data except for the SETTING menu are reset to the same state as when the power is turned on.

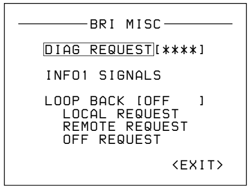
Checking the ISDN Interface

You can check the BRI interface software version, the Layer 1 status, or execute the loop back through the ISDN connection.

Checking the BRI interface

You can check the BRI interface software version. This item is only for checking.

1 Select 34. BRI MISC from the SETTING menu.
The following screen appears.



```
────────BRI MISC────────

   DIAG REQUEST[****]

   INFO1 SIGNALS

   LOOP BACK [OFF   ]
     LOCAL REQUEST
     REMOTE REQUEST
     OFF REQUEST

                <EXIT>
```

2 Select DIAG REQUEST using ⬆ or ⬇, then press ENTER.
The BRI software version number displays in the DIAG REQUEST box.

3 After checking the version, move the cursor to <EXIT> using ⬇, then press ENTER.
The DIAL LIST menu appears.

Generating the INFO 1 Signal for Testing Layer 1

1 Select 34. BRI MISC from the SETTING menu.

2 Press ⬇ to select INFO1 SIGNALS.

3 Press ENTER.
The INFO 1 signal generates and Layer 1 test starts.

4 After testing Layer 1, move the cursor to <EXIT> using ⬇, then press ENTER.
The DIAL LIST menu appears.

Note

This function is not available for normal communication.

Looping Back the Primitive

You can loop back the primitive of the request between the local and remote sites for another testing purpose,

1 Select 34. BRI MISC from the SETTING menu.

2 Press ⬇ twice.

3 Select loopback ON or OFF using ⬅ or ➡.

4 select LOCAL REQUEST, REMOTE REQUEST or OFF REQUEST using ⬆ or ⬇.

5 Press ENTER.
Loop back starts.

6 After finishing the loopback, move the cursor to <EXIT> using ⬇, then press ENTER.
The DIAL LIST menu appears.

Notes

- This function is not available for normal communication.
- You have to turn the Video Transmitters off and on at both sites after executing REMOTE REQUEST for next communication.

Chapter 3

Operation

Starting Communication

To connect to a remote site, dial the telephone number as you would call a normal telephone.
The Video Transmitter can send and receive voice, pictures and control data via one ISDN (BRI) line.

Connecting to a Remote Site

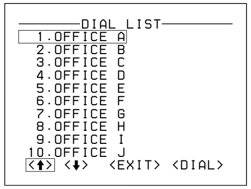
You can connect to a remote site in the following two ways. The connection method is different depending on whether a remote site has been registered or not.

To connect to a registered remote site

You have to register a called party in the SETTING menu before the communication.
For details, see "Registering Called Parties" on page 2-15 (EN).

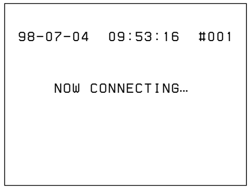
If the DIAL LIST menu is displayed, start from Step **2**.

1 Select the DIAL LIST from the main menu.
The DIAL LIST menu appears.



```
————DIAL LIST————
  1.OFFICE A
  2.OFFICE B
  3.OFFICE C
  4.OFFICE D
  5.OFFICE E
  6.OFFICE F
  7.OFFICE G
  8.OFFICE H
  9.OFFICE I
 10.OFFICE J
 <⬆> <⬇>  <EXIT> <DIAL>
```

2 Select the remote site to connect using ⬆ or ⬇, then press ENTER.
The following screen appears and the system starts the connection process.



```
98-07-04   09:53:16   #001

    NOW CONNECTING…
```

When the remote site is connected, the picture from the remote site is displayed.

To cancel the connection before connecting to a remote site

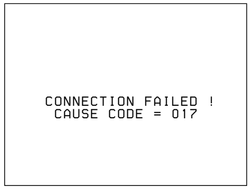
Press ⬅.
If you are using the tablet (WACOM ArtPad II for Windows, not supplied), select CANCEL on the tablet.

To move from page to page on the DIAL LIST menu

Move the cursor to <⬇> using ⬅ or ➡, then press ENTER. Each time you press ENTER, the next DIAL LIST menu is displayed.
Move the cursor to <⬆> using ⬅ or ➡, then press ENTER. Each time you press ENTER, the previous DIAL LIST menu is displayed.

If the connection failed

If the system cannot make a connection with the remote site, the following message and the ISDN cause code appear for five seconds and the DIAL LIST menu appears again.



```
CONNECTION FAILED !
 CAUSE CODE = 017
```

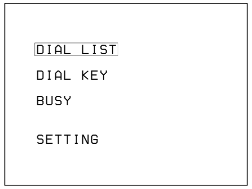
For details on the ISDN cause code, see "ISDN cause codes" on page A-7 (EN).

To return to the main menu

Move the cursor to <EXIT> and press ENTER. The main menu appears.

To connect to an unregistered remote site

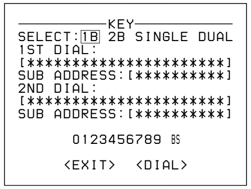
1 If the DIAL LIST menu is displayed, select <EXIT> to display the main menu.
If you have disabled the main menu, the following screen is displayed when you select <EXIT>. Proceed with the process from this screen.



```
DIAL LIST
DIAL KEY
BUSY

SETTING
```

When using the Remote Commander, skip the operation above.

2 Select DIAL KEY. When using the Remoter Commander, press DIAL.
The following screen appears.



```
——————KEY——————
SELECT:1B 2B SINGLE DUAL
1ST DIAL:
[**********************]
SUB ADDRESS:[**********]
2ND DIAL:
[**********************]
SUB ADDRESS:[**********]

     0123456789 BS

    <EXIT>  <DIAL>
```

3 Select the transmission rate (via an ISDN line from 1B or 2B, via the V.35 interface from SINGLE or DUAL) using ⬅ or ➡, then press ⬇.

4 Enter the telephone number for B1-channel of the remote site using ⬅ or ➡, then press ENTER one by one.
When using the Remote Commander, you can enter the number using the number keys.
The telephone number is entered in the telephone number box.
- An asterisk is displayed where nothing is entered.

5 Press ⬇ and enter the subaddress for B1-channel of the remote site using ⬅ or ➡, then press ENTER one by one.
When using the Remote Commander, you can enter the number using the number keys.
The subaddress is entered in the subaddress box.
- An asterisk is displayed where nothing is entered.

6 Press ⬇ and repeat steps **4** and **5** to enter the second telephone number and subaddress.

7 After entering the subaddress for the second telephone number, move the cursor to <DIAL> using ⬇, then press ENTER.

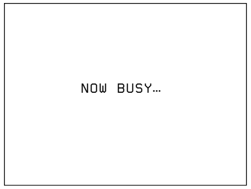
When the remote site is connected, the picture from the remote site is displayed.

Note
The subaddress function may not be worked properly depending on types of switchboards.

Making the Line Busy Temporarily

You can temporarily disable the line so that when a remote site calls, the system does not accept the call.

Select LOCAL BUSY from the main menu.
The following screen appears and the line is disabled.



```
NOW BUSY…
```

To enable the line
Press any key on the Video Transmitter or Remote Commander.
If you are using the tablet (WACOM ArtPad II for Windows, not supplied), select ENTER on the tablet.

The initial setting screen appears and soon the DIAL LIST menu appears.

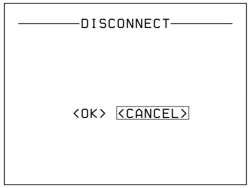
Notes

- The settings except for the items in the SETTING menu are reset to the original setting.
- This function may not worked properly depending on types of switchboards.

Ending Communication

Disconnecting the Line

1 Select DIAL DISC from the main menu.
The following screen appears.



```
───────DISCONNECT───────



     <OK>  <CANCEL>
```

2 Select <OK> using ➔, then press ENTER.
The line disconnects.

To cancel the operation
Move the cursor to <CANCEL> and press ENTER.
The operation is canceled and the main menu appears.

To disconnect the line with the Remote Commander

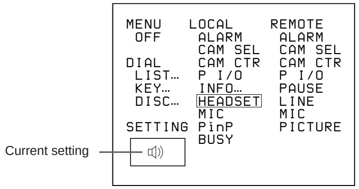
Press the DISCONNECT keys simultaneously.

Changing the Audio Level and Microphone Input Level

You can change the headset volume and the microphone input level out of two settings or mute the sound.
For details on 12. AUDIO MIC LEVEL, see “Adjusting Line (Headset) Audio Level and Microphone Input Level” on page 2-7 (EN).

Changing the Headset and Line Volume of the Local Site

1 Select LOCAL HEADSET from the main menu.
The current volume setting is displayed in the lower-left corner of the main menu.



```
MENU    LOCAL      REMOTE
 OFF     ALARM      ALARM
         CAM SEL    CAM SEL
DIAL     CAM CTR    CAM CTR
 LIST…   P I/O      P I/O
 KEY…    INFO…      PAUSE
 DISC…   HEADSET    LINE
         MIC        MIC
SETTING  PinP       PICTURE
         BUSY
 🔊
```

2 Press ENTER.
Each time you press ENTER, the volume setting is changed as follows.
→ 🔉 → OFF → 🔊 ↩

🔊 **:** The volume is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
🔉 **:** The volume is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF: Sound is muted.

Notes

- The headset sound is monaural.
- If you set AUDIO to OFF in the 12. AUDIO MIC LEVEL setting, no sound is output depending on whether you select 🔊 or 🔉.

Changing the Headset and Line Volume of the Remote Site

1 Select REMOTE LINE from the main menu.
The current volume setting is displayed in the lower-left corner of the main menu.

2 Press ENTER.
Each time you press ENTER, the volume setting is changed as follows.
→ 🔉 → OFF → 🔊 ↩

🔊 **:** The volume is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
🔉 **:** The volume is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF: Sound is muted.

Changing the Input Level of the Microphone of the Local Site

1 Select LOCAL MIC from the main menu.
The current input level setting is displayed in the lower-left corner of the main menu.

2 Press ENTER.
Each time you press ENTER, the input level setting is changed as follows.
→ 🔉 → OFF → 🔊 ↩

🔊 **:** The input level is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
🔉 **:** The input level is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF: No sound is input.

Changing the Input Level of the Microphone of the Remote Site

1 Select REMOTE MIC from the main menu.
The current input level setting is displayed in the lower-left corner of the main menu.

2 Press ENTER.
Each time you press ENTER, the input level setting is changed as follows.
→ 🔉 → OFF → 🔊 ↩

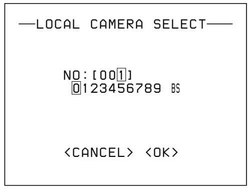
🔊 **:** The input level is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
🔉 **:** The input level is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF: No sound is input.

Selecting the Picture

You can select which pictures are displayed from the cameras connected to the VIDEO IN (1 – 8) connectors or EXT VIDEO IN (9 – 256) connectors. You can select the picture from either the local site or the remote site.

Switching the Pictures

1 To select a picture at the local site, select LOCAL CAM SEL from the main menu.
To select a picture at a remote site, select REMOTE CAM SEL.
The following screen appears. (The illustration below is for selecting LOCAL CAM SEL.)


—LOCAL CAMERA SELECT—
NO:[001]
0123456789 BS
<CANCEL> <OK>

2 Select the camera number you want to display on the monitor using ← or →, then press ENTER one by one.
The selected camera number is entered in the number box.

3 Move the cursor to <OK> using ↓, then press ENTER.
The picture of the selected camera is displayed.

Note

You cannot select a number greater than the total camera number set in the 8. CAMERA setting.

To switch the pictures with the Remote Commander

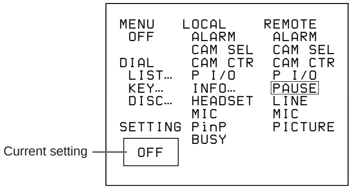
Press the CAMERA key and select the camera number with the number keys.

Stopping the Camera Auto Scan Temporarily

You can stop the camera auto scan temporarily.
For details on the camera auto scan, see "Switching Pictures Automatically" on page 2-14 (EN).

1 Select REMOTE PAUSE from the main menu.
The current setting is displayed in the lower-left corner of the main menu.

2 Press ENTER.
Each time you press ENTER, the setting is changed between ON and OFF.


MENU LOCAL REMOTE
OFF ALARM ALARM
CAM SEL CAM SEL
DIAL CAM CTR CAM CTR
LIST… P I/O P I/O
KEY… INFO… PAUSE
DISC… HEADSET LINE
MIC MIC
SETTING PinP PICTURE
BUSY
OFF
Current setting

ON: Disable camera auto scan.
OFF: Enable camera auto scan.

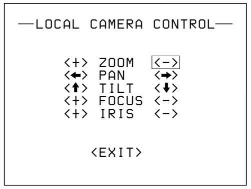
Adjusting the Picture

You can adjust a picture (zoom, pan, tilt, focus and iris) or change the picture quality.

Operating the Camera

You can operate the camera with the camera controller.

1 To operate a camera at the local site, select LOCAL CAM CTR from the main menu.
To operate a camera at a remote site, select REMOTE CAM CTR from the main menu.
The following screen appears. (The illustration below is for selecting LOCAL CAM CTR.)


—LOCAL CAMERA CONTROL—
<+> ZOOM <–>
<←> PAN <→>
<↑> TILT <↓>
<+> FOCUS <–>
<+> IRIS <–>
<EXIT>

2 Select an item to set using ←, ↑, →, or ↓. Press ENTER repeatedly to adjust the item.
The picture on the monitor is adjusted.

3 Move the cursor to <EXIT> using ↓, then press ENTER.
The main menu appears.

To adjust the zoom

Select <+> or <–> next to ZOOM.

To adjust the angle

Select <←> or <→> next to PAN or select <↑> or <↓> next to TILT for the desired angle.

To adjust the focus

Select <+> or <–> next to FOCUS.

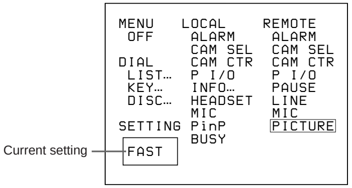
To adjust the iris

Select <+> or <–> next to IRIS.

Changing the Quality of the Picture Sent from a Remote Site

You can change the quality of the picture sent from a remote site.

1 Select REMOTE PICTURE from the main menu.
The current picture quality setting is displayed in the lower-left corner of the main menu.


MENU LOCAL REMOTE
OFF ALARM ALARM
CAM SEL CAM SEL
DIAL CAM CTR CAM CTR
LIST… P I/O P I/O
KEY… INFO… PAUSE
DISC… HEADSET LINE
MIC MIC
SETTING PinP PICTURE
BUSY
FAST
Current setting

2 Press ENTER.
Each time you press ENTER, the picture quality setting is changed as follows.

→ NORM → FAST → FINE ┐

FINE: Gives picture quality preference than picture motion.
NORM: Middle setting between FINE and FAST.
FAST: Gives picture motion preference than picture quality.

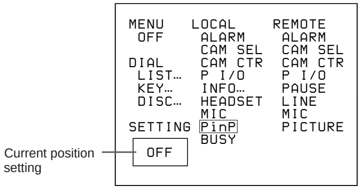
Changing the Screen Setting

You can display an inset window or character information on the monitor.

Changing the Position of the Inset Window (Picture-in-Picture)

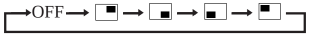
Normally, the monitor displays the picture sent from a remote site. You can display the picture sent from the local site to a remote site in an inset window.

1 Select LOCAL PinP from the main menu.
The current position setting is displayed in the lower-left corner of the main menu.



```
MENU     LOCAL      REMOTE
 OFF      ALARM      ALARM
          CAM SEL    CAM SEL
DIAL      CAM CTR    CAM CTR
 LIST…    P I/O      P I/O
 KEY…     INFO…      PAUSE
 DISC…    HEADSET    LINE
          MIC        MIC
SETTING  [PinP]      PICTURE
          BUSY
 [OFF]
```

2 Press ENTER.
Each time you press ENTER, the inset window setting is changed as follows.



- ▝ **:** The inset window is displayed in the upper-right corner.
- ▗ **:** The inset window is displayed in the lower-right corner.
- ▖ **:** The inset window is displayed in the lower-left corner.
- ▘ **:** The inset window is displayed in the upper-left corner.
- **OFF:** The inset window is not displayed.

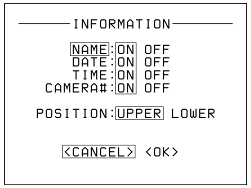
Note

The local site picture displayed in the inset window is a mirrored image.

Selecting the Information to Display on the Monitor

You can superimpose the following information on the on-line monitor.

1 Select LOCAL INFO from the main menu.
The following screen appears.



```
─────INFORMATION─────
     [NAME]:[ON] OFF
      DATE :[ON] OFF
      TIME :[ON] OFF
   CAMERA# :[ON] OFF

  POSITION:[UPPER] LOWER

     [<CANCEL>] <OK>
```

2 Select ON or OFF using ←, ↑, → or ↓, then press ↓.
The cursor moves down to the next line.

3 After setting all items, move the cursor to <OK> using ↓.

4 Press ENTER.
The information display is set and the main menu appears.

To display the site name
Select ON next to NAME.

To display the date
Select ON next to DATE.

To display the time
Select ON next to TIME.

To display a camera number
Select ON next to CAMERA #.

To select the position to display the information
Select UPPER or LOWER next to POSITION.

Setting Ports

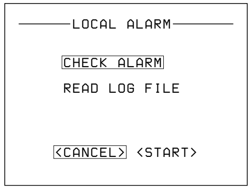
You can check alarm signals and log files in list view. You can also set the bit value of the RELAY OUT port.

Checking the Alarm Signals and Log File of the ALARM IN Port

The following describes how to check the ALARM IN port status.

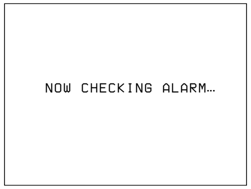
To check the alarm signal list

1 To check the local site’s alarm signal to the ALARM IN port, select LOCAL ALARM from the main menu.
To check the remote site’s alarm signal to the ALARM IN port, select REMOTE ALARM from the main menu.
The following screen appears. (The illustration below is for selecting LOCAL ALARM.)



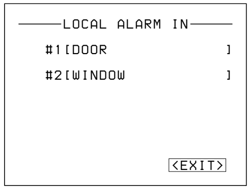
```
─────LOCAL ALARM─────

   [CHECK ALARM]
    READ LOG FILE


  [<CANCEL>] <START>
```

2 Move the cursor to <START> using →, then press ENTER.
The system starts to check the ALARM IN port.



```
NOW CHECKING ALARM…
```

If an alarm has generated, the alarm signal list is displayed.



```
────LOCAL ALARM IN────
  #1[DOOR          ]
  #2[WINDOW        ]



              [<EXIT>]
```

To move from page to page on the ALARM IN list
Move the cursor to <↓> using ← or →, then press ENTER. Each time you press ENTER, the next alarm signal list is displayed.
Move the cursor to <↑> using ← or →, then press ENTER. Each time you press ENTER, the previous alarm signal list is displayed.

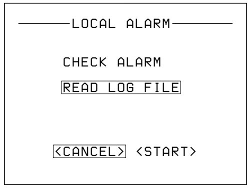
To return to the main menu
Move the cursor to <EXIT> and press ENTER. The main menu appears.

To check the ALARM IN port log file list

You can check the log file list on the ALARM IN port. Up to 128 log data items are stored in the list. If the list is full, the oldest log is deleted when a new one is entered.

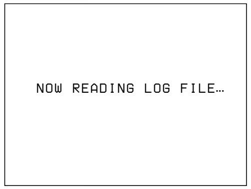
1 To check the local site’s log file list on the ALARM IN port, select LOCAL ALARM from the main menu.
To check the remote site’s log file list on the ALARM IN port, select REMOTE ALARM from the main menu.
The following screen appears. (The illustration below is for selecting LOCAL ALARM.)

2 Move the cursor to READ LOG FILE using ↓, then press ENTER.



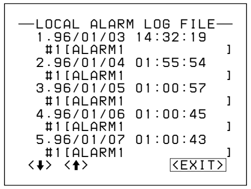
```
─────LOCAL ALARM─────

    CHECK ALARM
   [READ LOG FILE]


  [<CANCEL>] <START>
```

3 Move the cursor to <START> using ➡, then press ENTER.
The log file is read.



```
NOW READING LOG FILE…
```

The log file list is displayed.



```
——LOCAL ALARM LOG FILE——
  1.96/01/03 14:32:19
   #1[ALARM1              ]
  2.96/01/04 01:55:54
   #1[ALARM1              ]
  3.96/01/05 01:00:57
   #1[ALARM1              ]
  4.96/01/06 01:00:45
   #1[ALARM1              ]
  5.96/01/07 01:00:43
   #1[ALARM1              ]
 <⬇> <⬆>           <EXIT>
```

To move from page to page on the ALARM LOG FILE list

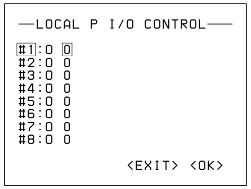
Move the cursor to <⬇> using ⬅ or ➡, then press ENTER. Each time you press ENTER, the next alarm log file list is displayed.
Move the cursor to <⬆> using ⬅ or ➡, then press ENTER. Each time you press ENTER, the previous alarm log file list is displayed.

To return to the main menu

Move the cursor to <EXIT> and press ENTER. The main menu appears.

Setting the Bit Value of the RELAY OUT Port

1 To set the bit value of the local site's RELAY OUT port, select LOCAL P I/O from the main menu.
To set the bit value of the remote site's RELAY OUT port, select REMOTE P I/O from the main menu.
The following screen appears. (The illustration below is for selecting LOCAL P I/O.)



```
——LOCAL P I/O CONTROL——

#1:0 0
#2:0 0
#3:0 0
#4:0 0
#5:0 0
#6:0 0
#7:0 0
#8:0 0

             <EXIT> <OK>
```

2 Select the port number using ⬆ or ⬇.

3 Move the cursor to the bit column using ⬅ or ➡, then press ENTER.
Each time you press ENTER, the bit setting is changed cyclically between 0 and 1.

4 After setting the bit value, move the cursor to <EXIT> using ⬇, then press ENTER.
The setting is registered and the main menu appears.

Note

You cannot change the setting of the RELAY OUT port which has been set to IN (That is set in 22.PARALLEL I/O in the SETTING menu.)
For details on 22.PARALLEL I/O, see "Setting Up the RELAY OUT Port" on page 2-11 (EN).

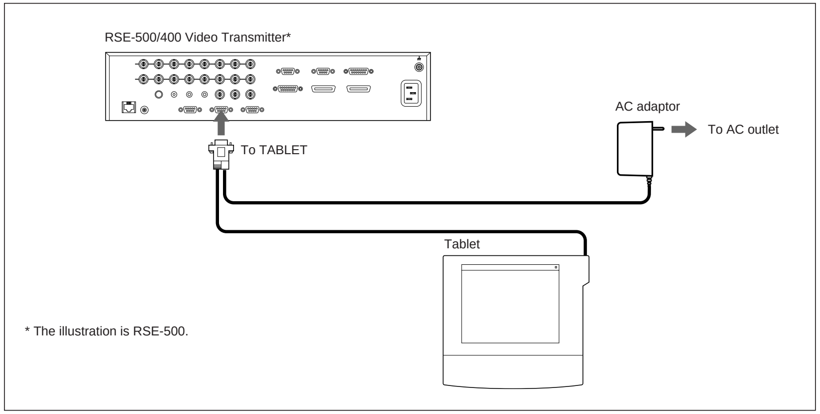
Chapter 4

Tablet Operation

Preparing the Tablet

You can operate the menus from the tablet (WACOM, ArtPad II for Windows, not supplied).

Connecting the Tablet


RSE-500/400 Video Transmitter*
AC adaptor
To AC outlet
To TABLET
Tablet
* The illustration is RSE-500.

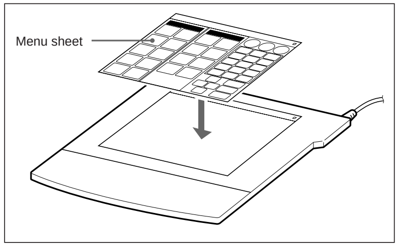
Connecting the tablet

Note

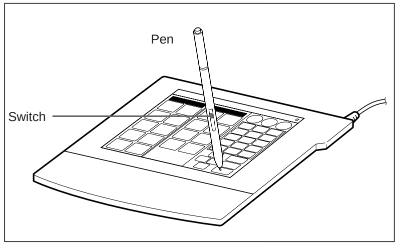
The tablet does not function if it is connected when the Video Transmitter power is turned on. Connect the tablet and first turn on the tablet power before turning on the power of the Video Transmitter.

Pasting the Menu Sheet on the Tablet

Peel off the seal from the supplied menu sheet and paste it on the tablet.



Operating Menus From the Tablet



Using the Tablet

To select an item and setting

Press the tablet icon with the pen or press the pen switch when the item or setting becomes highlighted.
For details on tablet operation, see the Operating Instructions of the Tablet.

Notes

- If you are not using the pen, place it in the pen stand.
- Do not use the keys on the main unit, the tablet and the Remote Commander at the same time. If you use them simultaneously, the Video Transmitter may not function properly.

Tablet Icons

The menu operations are the same as the operations from the main unit.
For details, see the appropriate page for a particular operation.

Icons on the right side of the menu sheet

☎	Disconnects the line (Hung-up.) *For details, see “ Disconnecting the Line” on page 3-3 (EN).*
123 ☎	Connects to a remote site that is not registered (Dial.) *For details, see “To connect to an unregistered remote site” on page 3-2 (EN).*
☎	Connects to a registered remote site. *For details, see “To connect to a registered remote site” on page 3-1 (EN).*
1 2 3 4 5 6 7 8 9 * 0 #	Enters numbers (e.g., telephone number.) 1 and 3 icons are also used to adjust the zoom. 4 and 6 icons are also used to adjust the focus. 7 and 9 icons are also used to adjust the iris. *For details on camera operation, see “Operating the Camera” on page 3-6 (EN).*
BS	Deletes the last character (Back space.)
PAGE − PAGE +	Switches the menu page. PAGE − switches to the previous page. PAGE + switches to the next page.
↑ ← → ↓	Same as the cursor keys on the Video Transmitter. These keys also control the camera controller. The camera angle moves in the selected direction. *For details, see “Operating the Camera” on page 3-6 (EN).*
OK	Selects <OK> on the monitor screen.
CANCEL	Selects <CANCEL> on the monitor screen.
ENTER	Same as the ENTER key on the Video Transmitter and enter key on the Remote Commander.

LOCAL site icons

HEADSET	Each time you select ENTER, the headset or line volume setting of the local site is changed. *For details, see “Changing the Headset and Line Volume of the Local Site” on page 3-4 (EN).*
MIC	Each time you select ENTER, the microphone input level setting of the local site is changed. *For details, see “Changing the Input Level of the Microphone of the Local Site” on page 3-4 (EN).*
P in P	Each time you select ENTER, the inset window setting is changed. *For details, see “Changing the Position of the Inset Window (Picture-in-Picture)” on page 3-7 (EN).*
BUSY	Makes the line busy temporarily. *For details, see “Making the Line Busy Temporarily” on page 3-3 (EN).*
SETTING	Displays the SETTING menu. *For details, see “Selecting an Item in the SETTING Menu” on page 2-2 (EN).*
ALARM	Checks the alarm signals and log file of the local ALARM IN port. *For details, see “Checking the Alarm Signals and Log File of the ALARM IN Port” on page 3-8 (EN).*
CAMERA SELECT	Switches the pictures of the local site. *For details, see “Switching the Pictures” on page 3-5 (EN).*
CAMERA CONTROL	Operates a local site camera. 1 3 Adjust the zoom. 4 6 Adjust the focus. 7 9 Adjust the iris. ↑ ← → ↓ Move the camera angle in the selected direction.
P I/O CONTROL	Sets the bit value of the local RELAY OUT port. *For details, see “Setting the Bit Value of the RELAY OUT Port” on the page 3-9 (EN).*
INFORMATION	Selects the information to display or not. *For details, see “Selecting the Information to Display on the Monitor” on page 3-7 (EN).*

REMOTE site icons

AUTO SCAN PAUSE	Disables camera auto scan temporarily. *For details, see “Stopping the Camera Auto Scan Temporarily” on page 3-5 (EN).*
LINE	Each time you select ENTER, the line or headset volume setting is changed. *For details, see “Changing the Headset and Line Volume of the Remote Site” on page 3-4 (EN).*
MIC	Each time you press ENTER, the microphone input level setting is changed. *For details, see “ Changing the Input Level of the Microphone of the Remote Site” on page 3-4 (EN).*
PICTURE MODE	Each time you select ENTER, the picture quality setting is changed. *For details, see “Changing the Quality of the Picture Sent from a Remote Site” on page 3-6 (EN).*
ALARM	Checks the alarm signals and log file of the remote ALARM IN port. *For details, see “Checking the Alarm Signals and Log File of the ALARM IN Port” on page 3-8 (EN).*
CAMERA SELECT	Switches the pictures of the remote site. *For details, see “Switching the Pictures” on page 3-5 (EN).*
CAMERA CONTROL	Operates a remote site camera. The operation is the same as the operation described for the CAMERA CONTROL icon of LOCAL position. *For details, see “Operating the Camera” on page 3-6 (EN).*

Tablet Icons

P I/O CONTROL

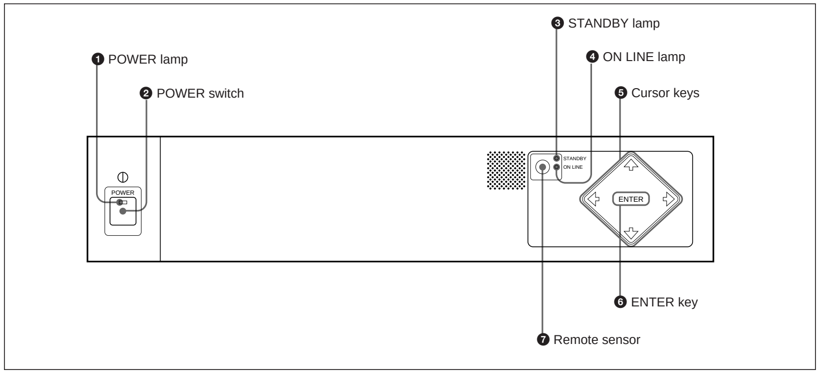
Sets the bit value of the remote RELAY OUT port.
For details, see “Setting the Bit Value of the RELAY OUT Port” on the page 3-9 (EN).

Appendix

Location and Function of Controls

Video Transmitter

Front (RSE-500/400)


❶ POWER lamp
❷ POWER switch
❸ STANDBY lamp
❹ ON LINE lamp
❺ Cursor keys
❻ ENTER key
❼ Remote sensor
POWER
STANDBY
ON LINE
ENTER

Front of Video Transmitter

❶ POWER lamp
Lights up green when the Video Transmitter is turned on by pressing the POWER switch ❷.

❷ POWER switch
Turns on the Video Transmitter.

❸ STANDBY lamp
Lights up red when the Video Transmitter is in the standby mode.

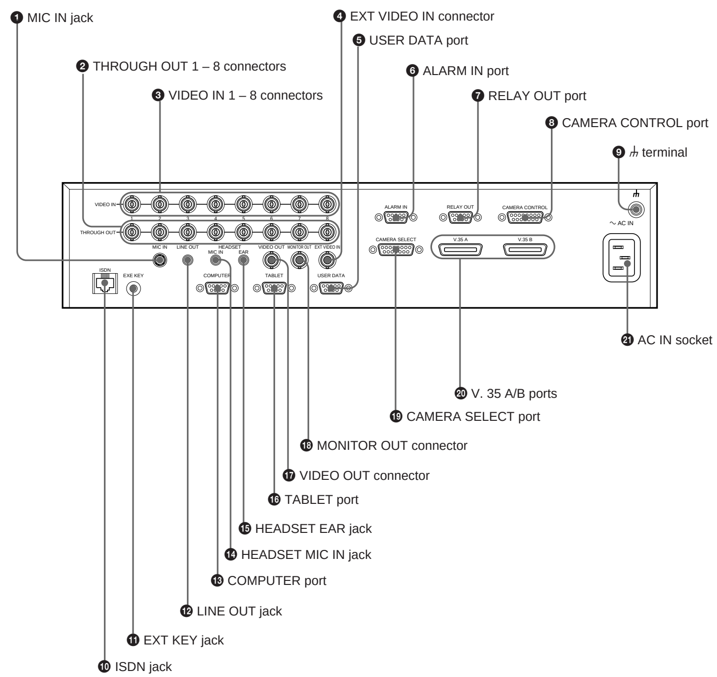
❹ ON LINE lamp
Lights up green when a remote site is connected.

❺ Cursor keys (⇦, ⇧, ⇨, ⇩)
Press these keys to move the cursor.

❻ ENTER key
Press this key to confirm the operation.

❼ Remote sensor
Point the Key Commander or Remote Commander (not supplied) at this sensor.

Rear


❶ MIC IN jack
❷ THROUGH OUT 1 – 8 connectors
❸ VIDEO IN 1 – 8 connectors
❹ EXT VIDEO IN connector
❺ USER DATA port
❻ ALARM IN port
❼ RELAY OUT port
❽ CAMERA CONTROL port
❾ ⏚ terminal
VIDEO IN
THROUGH OUT
MIC IN
LINE OUT
HEADSET
MIC IN
EAR
VIDEO OUT
MONITOR OUT
EXT VIDEO IN
ALARM IN
RELAY OUT
CAMERA CONTROL
CAMERA SELECT
V.35 A
V.35 B
~ AC IN
ISDN
EXT KEY
COMPUTER
TABLET
USER DATA
㉑ AC IN socket
⓴ V. 35 A/B ports
⓳ CAMERA SELECT port
⓲ MONITOR OUT connector
⓱ VIDEO OUT connector
⓰ TABLET port
⓯ HEADSET EAR jack
⓮ HEADSET MIC IN jack
⓭ COMPUTER port
⓬ LINE OUT jack
⓫ EXT KEY jack
❿ ISDN jack

The illustration above is RSE-500

Rear of Video Transmitter

❶ MIC IN jack (4 pin, female)
Connect the microphone.

❷ THROUGH OUT 1 – 8 connectors (BNC-type)
Outputs the video signal input from the VIDEO IN 1 – 8 connectors.

❸ VIDEO IN 1 – 8 connectors (BNC-type)
Connect the video equipment.

❹ EXT VIDEO IN connector (BNC-type)
Connect the camera switcher.
Inputs the video signal of a camera (9 – 256) connected to the camera switcher.

❺ USER DATA port (D-sub 9-pin, male)
Connect another device which has the RS-232C port for data transmission. (DTE standards)
This port can be set to the RS-232C or the RS-485 interface. When you set this port to the RS-485 interface, you cannot use this port.
This port is set to the RS-232C interface at the factory setting.

❻ ALARM IN port (D-sub 9-pin, male)
Connect the alarm generator. An alarm signal is input to this port.

❼ RELAY OUT port (D-sub 9-pin, male)
This port is set to INPUT for RSE-500 and to OUTPUT for RSE-400 at the factory.

❽ CAMERA CONTROL port (D-sub 15-pin, male)
Connect the camera controller.
This port is set to INPUT for RSE-500 and to OUTPUT for RSE-400 at the factory.

❾ ⏚ (ground) terminal
Connect to ground line.

❿ ISDN jack (8-pin modular)
Connect to the ISDN line with the supplied ISDN modular cable.

⓫ EXT KEY jack (minijack)
Connects the RM-R500 Remote Commander or RM-PJ10 Remote Control Receiver (not supplied).

⓬ LINE OUT jack (pin jack)
Outputs audio signal input from the MIC IN jack.

⓭ COMPUTER port (D-sub 9-pin, male)
Connect another device which has the RS-232C port for data transmission. (DTE standards)
This port is set to the RS-232C interface at the factory.

⓮ HEADSET MIC IN jack (minijack)
Connect the microphone miniplug of the headset.

⓯ HEADSET EAR jack (minijack)
Connect the headphones miniplug of the headset.

⓰ TABLET port (D-sub 9-pin, male)
Connect the tablet (WACOM Art Pad II for Windows, not supplied.) This port is set to the RS-232C interface at the factory.

⓱ VIDEO OUT connector (BNC-type) (only for RSE-500)
Connect the monitor for menu operations.

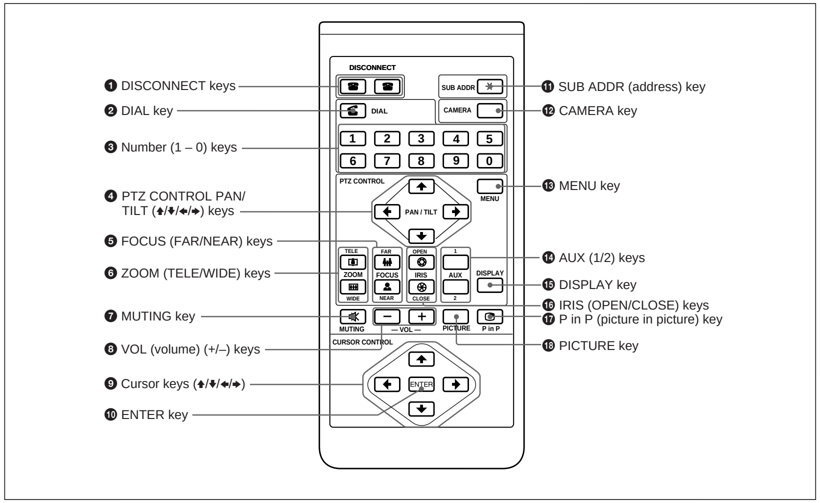
⓲ MONITOR OUT connector (BNC-type)
Connect the monitor for monitoring the picture input from the VIDEO IN 1 – 8 or the EXT VIDEO IN connector.

⓳ CAMERA SELECT port (D-sub 15-pin, male)
Connect the camera switcher to switch the picture of cameras connected to the camera switcher.

⓴ V. 35 A/B ports (half-pitch 36-pin)
Connect to the terminal adaptor with the V.35 cable (not supplied.)

㉑ AC IN (inlet) socket
Connect to an AC outlet with the supplied AC power cord.

Remote Commander (RM-R500) (Supplied With RSE-500 Only)


❶ DISCONNECT keys
❷ DIAL key
❸ Number (1 – 0) keys
❹ PTZ CONTROL PAN/TILT (↑/↓/←/→) keys
❺ FOCUS (FAR/NEAR) keys
❻ ZOOM (TELE/WIDE) keys
❼ MUTING key
❽ VOL (volume) (+/–) keys
❾ Cursor keys (↑/↓/←/→)
❿ ENTER key
⓫ SUB ADDR (address) key
⓬ CAMERA key
⓭ MENU key
⓮ AUX (1/2) keys
⓯ DISPLAY key
⓰ IRIS (OPEN/CLOSE) keys
⓱ P in P (picture in picture) key
⓲ PICTURE key
DISCONNECT
SUB ADDR
DIAL
CAMERA
1 2 3 4 5
6 7 8 9 0
PTZ CONTROL
PAN / TILT
MENU
TELE
FAR
OPEN
1
ZOOM
FOCUS
IRIS
AUX
DISPLAY
WIDE
NEAR
CLOSE
2
MUTING
— VOL —
PICTURE
P in P
CURSOR CONTROL
ENTER

❶ DISCONNECT keys
Press these two keys simultaneously to disconnect the line.

❷ DIAL key
Press this key to call the remote party, the KEY menu appears. (See page 3-2 (EN))

❸ Number (1 – 0) keys
Press this key to input numbers such as telephone numbers and subaddresses.

❹ PTZ CONTROL PAN/TILT (↑/↓/←/→) keys
These keys adjust the camera angle.
← key functions as BS (back space) key when adjusting the SETTING menu during off line.

❺ FOCUS (FAR/NEAR) keys
These keys control the focus of the camera.
FAR: press to focus the picture further away.
NEAR: press to focus the picture closer.

❻ ZOOM (TELE/WIDE) keys
These keys control the zoom of the camera.
TELE: press to zoom in the picture.
WIDE: press to zoom out the picture.

❼ MUTING key
This key mutes the sounds of the local party. Press again to cancel the muting.

❽ VOL (volume) (+/–) keys
These keys adjust the volume of the remote party.
+: press to increase the volume.
–: press to decrease the volume.

❾ Cursor keys (↑/↓/←/→)
These keys move the cursor on the monitor screen to the desired position.
Holding a key down keeps the cursor moving in the direction of the key selected. To move the cursor one increment only, press once.
If you press the ← key during the connection process, the connection is canceled.

❿ ENTER key
This key functions the same as the ENTER key of the unit.

⓫ SUB ADDR (address) key
This key is for future use.

⓬ CAMERA key
Press this key to select the camera. For setting the camera number, use the number keys ❸.

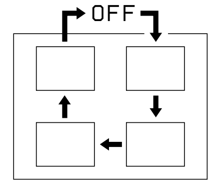
⓭ MENU key
Press this key to bring up the main menu on the monitor screen.

⓮ AUX (1/2) keys
Press these keys to recall preset camera angles and zoom settings.
1: press to recall settings registered in 1.
2: press to recall settings registered in 2.

⓯ DISPLAY key
Press this key to set the on-screen display. Each time you press this key, the screen switches between ON and OFF.

⓰ IRIS (OPEN/CLOSE) keys
These keys control the iris of the camera.
OPEN: press to open the iris.
CLOSE: press to close the iris.

⓱ P in P (picture in picture) key
This key displays an inset window on the monitor screen. Each time you press the key, the inset window moves as follows.



The monitor screen

⓲ PICTURE key
This key changes the quality of the picture. Each time you press the key, the quality of the picture changes cyclically among FINE, NORM and FAST.

Transmitting Data

You can transmit data from a device connected to the USER DATA port between Video Transmitters via ISDN.

Connecting a Device to the USER DATA Port

Connect the RS-232C port of the device and the USER DATA port of the Video Transmitter with the RS-232C cable.

Use an appropriate RS-232C cable that complies with the USER DATA port standards.
For details on pin assignment of the USER DATA port, see “Pin Assignment” on page A-10 (EN).

Data Transmission Format

The data transmission format is as follows:
Baud rate: 1200/4800/9600/19200 bps
Data word length: 7/8 bits
Parity bits: none/odd/even
Stop bits: 1/1.5/2 bits

For details, see “Setting Up the USER DATA Port” on page 2-13 (EN).

Troubleshooting

If the Video Transmitter system does not function or functions incorrectly, check the following

Cause and Remedy

Symptom	Cause	Remedy
The main menu is not displayed.	The Video Transmitter is not turned on.	Press the POWER switch. (page 1-6 (EN))
	The Remote Commander batteries are dead.	Replace the batteries. (page 1-6 (EN))
	The Video Transmitter and monitor are not connected properly.	Check the connection. (pages 1-4 (EN), 1-5 (EN))
	The monitor is not turned on.	Turn on the monitor.
	The main menu is not set to display.	Set 20. MENU to ON in the SETTING menu. (page 2-9 (EN))
	The Video Transmitter is in the standby mode.	Press any key on the Video Transmitter or Remote Commander. Select any location on the tablet.
No sound or little sound	Volume setting is too low.	Adjust the volume in 12. AUDIO MIC LEVEL in the SETTING menu (page 2-7 (EN)).
	Volume is disabled.	Set 13. AUDIO-HEADSET to HIGH or LOW in the SETTING menu. (page 2-8 (EN))
	Microphone, headset, or speaker are not connected.	Connect microphone, headset or speaker. (pages 1-4 (EN), 1-5 (EN))
Blurred image	Out of focus.	Adjust the focus in CAM CTR in the main menu. (page 3-6 (EN)) Adjust the camera focus.
No picture	The number of cameras connected to the Video Transmitter is not registered.	Register the number of cameras in 8.CAMERA in the SETTING menu. (page 2-13 (EN))
	Camera is not connected properly.	Check the connection. (pages 1-4 (EN),1-5 (EN))
	Camera iris is closed.	Adjust the iris in CAM CTR in the main menu. (page 3-6 (EN)) Adjust the camera iris.
	Camera number is not selected.	Select a camera number in CAM SEL in the main menu. (page 3-5 (EN))
	The picture is switched to a camera number whose signal is not input in the camera auto scan mode.	Cancel the camera auto scan mode. (page 3-5 (EN))
Cannot connect to a remote site.	The line is not connected.	Check the ISDN line connection. (pages 1-4 (EN),1-5 (EN))
	The telephone number of the remote site is not registered.	Register the telephone number in 5. LIST (NORMAL) in the SETTING menu. (page 2-15 (EN))

ISDN cause codes

If the connection failed via ISDN, the Video Transmitter displays the ISDN cause code which is sent by ISDN network to show you the call status information.

Code	Meaning	Code	Meaning
1	Unallocated (unassigned) number	57	Bearer capability not authorized
2	No route to specified transit network	58	Bearer capability not presently available
3	No route to dest	63	Service or option not available, unspecified
6	Channel unacceptable	65	Bearer capability not implemented
7	Call awarded and being delivered in an established channel	66	Channel type not implemented
16	Normal clearing	69	Requested facility not implemented
17	User busy	70	Only restricted digital information bearer capability is available
18	No user responding	79	Service or option not implemented, unspecified
19	User alerting, no answer	81	Invalid call reference value
20	No reply	82	Identified channel does not exist
21	Call rejected	83	A suspended call exists, but this call identity does not
22	Number Changed	84	Call identity in use
26	Non-selected user clearing	85	No call suspended
27	Destination out of order	86	Call having the requested call identity has been cleared
28	Invalid number format (incomplete address)	88	Incompatible destination
29	Facility rejected	91	Invalid transit network selection
30	Response to STATus ENQuiry	95	Invalid message, unspecified
31	Normal, unspecified	96	Mandatory information element is missing
34	Circuit/channel congestion	97	Message type non-exist, or not implemented
38	Network out of order	98	Message not compatible with call state or message type non-existent or not implemented
41	Temporary failure		
42	Switching equipment congestion	99	Information element non-existent or not implemented
43	Access information discarded	100	Invalid information element contents
44	Requested channel not available	101	Message not compatible with call state
47	Resource unavailable, unspecified	102	Recovery of timer expiry
49	Quality of service unavailable	111	Protocol error, unspecified
50	Requested facility not subscribed	127	Interworking, unspecified

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Specifications

Video Transmitter

Motion video

Operating bandwidth	56 Kbps/64 Kbps/112 Kbps/128 Kbps
Coding	H.261 (ITU-T recommendation)
Picture elements	CIF 352 pixel × 288 lines
Frame rate	Maximum 15 frames per second
Color system	NTSC (Mutually connectable with PAL system.)

Audio

Bandwidth	3.4 kHz (ITU-T recommendation G.728)
Transfer rate	16 Kbps (ITU-T recommendation G.728)

Network

Multiplexing	Video, audio, data
Frame format	H.221 (ITU-T recommendation)
Interface	ISDN (BRI)

Tablet input

Interface	RS-232C
Baud rate	9600 bps

User data I/O

Interface	RS-232C
Baud rate	1200/4800/9600/19200 bps

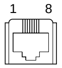
Power/General

Power requirements	AC 120 V, 50/60 Hz
Power consumption	0.55 A
Operating temperature	41°F to 94°F (5°C to 35°C)
Operating humidity	20% to 80% (no condensation)
Storage temperature	–4°F to 140°F (–20°C to 60°C)
Storage temperature	20% to 80% (no condensation)
Dimensions	16 3/4 × 3 1/2 × 14 inches (424 × 88 × 356 mm) excluding projecting parts (w/h/d)
Mass	15 lb 7 oz (7.0 kg)
Accessories supplied	Remote Commander (1) (only for RSE-500) Size AA (LR6) alkaline batteries (2) (only for RSE-500) Menu sheet (1) AC power cord (1) Operating Instructions (1)

Design and specifications are subject to change without notice.

Pin Assignment

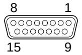
ISDN jack



Modular jack

Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	NC	—	5	RB	Receive–
2	NC	—	6	TB	Transmit–
3	TA	Transmit+	7	NC	—
4	RA	Receive+	8	NC	—

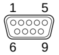
CAMERA SELECT port (female)



D-sub 15-pin port

Pin	Acronym	Meaning
1	DGND	Digital ground
2	VISEL0	Camera select 0
3	VISEL1	Camera select 1
4	VISEL2	Camera select 2
5	VISEL3	Camera select 3
6	VISEL4	Camera select 4
7	VISEL5	Camera select 5
8	VISEL6	Camera select 6
9	VISEL7	Camera select 7
10	ON LINE	On line
11	ALARM OUT	Alarm out
12	DGND	Digital ground
13	DGND	Digital ground
14	RS-485A	RS-485+
15	RS-485B	RS-485–

COMPUTER port (male)



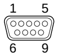
D-sub 9-pin port

Pin	Acronym	Meaning
1	NC (DCD)	(Data carrier detect)
2	RxD	Receive data
3	TxD	Transmit data
4	DTR	Data terminal ready
5	GND	Ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	NC	—

Notes

- Pins 4 and 6 have a short-circuit inside the unit.
- Pins 7 and 8 have a short-circuit inside the unit.

TABLET port (male)



D-sub 9-pin port

When setting to the RS-232C interface

Pin	Acronym	Meaning
1	NC (DCD)	(Data carrier detect)
2	RxD	Receive data
3	TxD	Transmit data
4	DTR	Data terminal ready
5	GND	Ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	NC	—

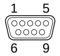
When setting to the RS-422 interface

Pin	Acronym	Meaning
1	NC	—
2	TB	Transmit +
3	RA	Receive +
4	NC	—
5	GND	Ground
6	NC	—
7	TA	Transmit –
8	RB	Receive –
9	NC	—

Note

Pins 4 and 6 have a short-circuit and pins 7 and 8 are used as a flow control signal when setting to the RS-232C interface.

USER DATA port (male)



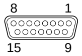
D-sub 9-pin port

Pin	Acronym	Meaning
1	NC (DCD)	(Data carrier detect)
2	RxD	Receive data
3	TxD	Transmit data
4	DTR	Data terminal ready
5	GND	Ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	NC	—

Notes

- This port can be used as either the RS-232C or the RS-485 interface. If this is used as the RS-485 interface, pins 14 and 15 of the CAMERA SELECT port are used for the RS-485 interface.
- Pins 4 and 6 have a short-circuit and pins 7 and 8 are used as a flow control signal when setting to the RS-232C interface.

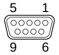
CAMERA CONTROL port (female)



D-sub 15-pin port

Pin	Acronym	Meaning
1	C1	Tilt ↑
2	C2	Tilt ↓
3	C3	Pan →
4	C4	Pan ←
5	C5	Zoom –
6	C6	Zoom +
7	C7	Focus –
8	C8	Focus +
9	C9	Iris –
10	C10	Iris +
11	C11	AUX1
12	C12	AUX2
13	GND	Ground
14	GND	Ground
15	GND	Ground

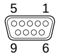
ALARM IN port (female)



D-sub 9-pin port

Pin	Meaning	Pin	Meaning
1	Port 1	6	Port 6
2	Port 2	7	Port 7
3	Port 3	8	Port 8
4	Port 4	9	Ground
5	Port 5	–	–

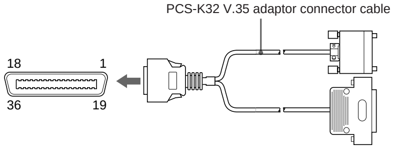
RELAY OUT port (female)



D-sub 9-pin port

Pin	Meaning	Pin	Meaning
1	Port 1	6	Port 6
2	Port 2	7	Port 7
3	Port 3	8	Port 8
4	Port 4	9	Ground
5	Port 5	–	–

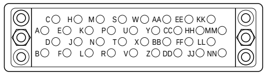
V.35 (A/B) port (female)



Half-pitch 36-pin port

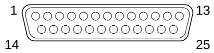
Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	SGND	Signal ground	19	SGND	Signal ground
2	SGND	Signal ground	20	SGND	Signal ground
3	CABLE1	CABLE1	21	CABLE2	CABLE2
4	V35SD+	Send data+	22	V35RI	Ring Indication
5	V35SD–	Send data–	23	V35DR	Data set ready
6	V35RD+	Receive data+	24	366DLO	Data line occupied
7	V35RD–	Receive data–	25	V35CS	Clear to send
8	V35ER	Data terminal ready	26	366ACR	Abandon call &retry
9	V35RS	Request to send	27	366DPR	Digit present
10	V35ST+	Send Timing+	28	366CRQ	Call request
11	V35ST–	Send Timing–	29	366PND	Present next digit
12	V35RT+	Receive Timing+	30	366NB1	Digit signal 1
13	V35RT–	Receive Timing–	31	366NB2	Digit signal 2
14	V35TT+	Transmit Timing+	32	366NB4	Digit signal 4
15	V35TT–	Transmit Timing–	33	366NB8	Digit signal 8
16	SGND	Signal ground	34	SGND	Signal ground
17	SGND	Signal ground	35	SGND	Signal ground
18	CGND	Chassis ground	36	SGND	Signal ground

CCITT V.35 connector (cable side)



Pin	Signal	Description
A	CGND	Chassis ground
B	SGND	Signal ground
C	V35RS	Request to send
D	V35CS	Clear to send
E	V35DR	Data set ready
H	V35ER	DTE ready
J	V35RI	Ring indicator
P	V35SD+	Send data+
R	V35RD+	Receive data+
S	V35SD–	Send data–
T	V35RD–	Receive data–
U	V35TT+	Transmit timing+
V	V35RT+	Receive timing+
W	V35TT–	Transmit timing–
X	V35RT–	Receive timing–
Y	V35ST+	Send timing+
AA	V35ST–	Send timing–

D-sub 25-pin connector (cable side)



Pin	Signal	Description
1	SGND	Signal ground
2	366DPR	Digit present
3	366ACR	Abandon call & retry
4	366CRQ	Call request
5	366PND	Present next digit
7	SGND	Signal ground
14	366NB1	Digit signal 1
15	366NB2	Digit signal 2
16	366NB4	Digit signal 4
17	366NB8	Digit signal 8
18	SGND	Signal ground
19	SGND	Signal ground
22	366DLO	Data line occupied

Glossary

Codec
An abbreviation for Coder-Decoder. An electronic device that converts an analog signal such as voice or video to a digital data stream, compresses it, and sends it over a digital communications line. Another codec reverses the process at the receiving site.

Compression
A task where a codec compresses data before sending it over a digital communications line.

Interface
A protocol connecting two different devices so that they can communicate with each other.

ISDN
An acronym for Integrated Services Digital Network. This is a communications protocol defined by CCITT on transmission of integrated voice, video, and data. Bandwidths include basic (64 Kbps) and primary rate (1.544 and 2.048 Mbps.)

Menu
A collection of settings shown on the TV monitor which the user can change.

PinP
An abbreviation for Picture-in-Picture. This function allows the user, while keeping the remote scene on the TV monitor, to display the local scene in a smaller window on the same TV monitor.

Subaddress
One ISDN line can support up to 8 devices. Because all these devices share the same line number, subaddresses are applied to them so that each has a unique number.

Zoom
With the camera remaining stationary, by adjusting the zoom lens you can quickly move in or out on an object.

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CORRECTION

- Please add the following information after step **10** of "Registering the Telephone Number and Subaddress" **on page 2-4 (EN)**.

  If you register a wrong setting, the unit keeps beeping after selecting <OK> in step **10** and you cannot return to the SETTING menu. If this occurs, press ENTER to return to the SETTING menu and register the "TELEPHONE #" items properly.
  If not, you cannot start communication nor the DIAL LIST menu does not appear even if you turn off and on the power. In such case, press ENTER to display the DIAL LIST menu and register the "TELEPHONE #" items properly.

- Please correct the pin assignment table of the TABLET port **on page A-9 (EN)** as follows.

When setting to the RS-422 interface

Pin	Acronym	Meaning
1	NC	—
2	TB	Transmit –
3	RA	Receive +
4	NC	—
5	GND	Ground
6	NC	—
7	TA	Transmit +
8	RB	Receive –
9	NC	—

1-2. PMS-500P/400P [MONITORING CODEC]

SONY®

3-810-719-**11** (2)

Monitoring Codec

Operating Instructions E

PMS-500P
PMS-400P

© 1996 by Sony Corporation

Owner's Record

The model and the serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. PMS-500P/400P

Serial No. ______________

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

For the Customers in the United Kingdom

APPROVAL NOTICE

Monitoring Codec PMS-500P/400P are approved for connection to PSTN using basic rate access interace compatible with CCITT I.420 (ISDN).

The BABT approval number for PMS-500P is NS/1021/5/V/606705.

The BABT approval number for PMS-400P is NS/1021/5/V/606706.

This manual focuses on using ISDN lines to conduct a videoconference, but it also covers non-ISDN lines. If you use ISDN lines, consult your Sony dealer for more information.
- The ISDN service may not be available in some areas.

English

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Precautions

On Safety

Power supply

- Before operating the Monitoring Codec, make sure the operating voltage of the unit is identical with that of your local power supply. The Remote Commander operates on two size AA (LR6) alkaline batteries.
- Do not unnaturally bend or crimp power cords, and do not place heavy objects on them. Damage to the cords may result in fire or electric shock.
- To remove a power cord from an AC outlet, pull on the plug. (Do not pull on the cord.)

Do not disassemble the unit

Do not open or disassemble the cabinet of the unit. Electric shock may result if you touch the inside of the cabinet.

Do not put foreign objects into the unit

Avoid having metallic or flammable object, liquid, or foreign matters fall into the cabinets of the unit. Otherwise a malfunction may result.

In case of trouble

In case of trouble such as smoke, odd smell, or noise, turn off all units of the system. Disconnect all the power cords and connecting cords. Then contact the place of purchase or an authorized Sony representative.

ISDN

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.

On Handling

Installation/storage

Do not expose the system to:

- extremely low or high temperatures.
- damp or dusty room.
- strong vibration.
- devices which generate strong magnetic fields.
- devices (such as radios or TVs) which transmit strong radio waves.
- noisy place.

Cleaning

Wipe the cabinet and panel with a dry, soft cloth. If the stain is serious, slightly moisten the cloth with mild detergent. Afterward, use a dry cloth to wipe it. Do not use solvents such as thinner, benzine, alcohol, as they may damage the finish of the cabinet.

Features

The Monitoring Codec can send and receive voice, pictures and control data via ISDN.

Conventional remote monitoring systems provide only still images. The Sony Monitoring Codec provides moving pictures for real-time and precise monitoring. The Monitoring Codec system is perfect for the requirements of the distribution and service industries demanding monitoring capabilities.

The system requires only one ISDN line for voice, pictures and control data

High quality images using H.261 compression technology, voice and control data can be sent or received simultaneously via one ISDN line. The ISDN modular jack can be connected directly to the Monitoring Codec.

	Picture		**Voice**		**Control data**
	Send	**Receive**	**Send**	**Receive**	**Send/Receive**
PMS-500P	●	●	●	●	●
PMS-400P	●	—	●	●	●

●: possible —: impossible

Relay control and remote diagnostics

From the central site, you can operate a device (e. g., turning on lights or opening/closing doors) at a terminal site or you can monitor voice at a terminal site.
From the central site, you can diagnose a terminal site and identify the location of malfunctions or errors, enabling quick and efficient recovery.

Automatic data transmission upon detection of alarm signal

Up to 20 telephone numbers can be registered in one alarm port. When an alarm signal is detected, data is automatically transmitted to the registered telephone numbers.

Automatic camera selection upon detection of alarm signal

Up to 8 alarm signals can be input into one ALARM IN port. When an alarm signal is input, the system switches to the picture related to the port number which the alarm signal is input.

Up to 128 telephone numbers can be registered

Up to 128 telephone numbers can be registered on one Monitoring Codec, allowing for a large-scale remote monitoring system.

On-line picture quality adjustment (only for PMS-500P)

While watching the picture from a remote site, you can change the picture quality (3 levels) to suit your needs.

Can be added to your existing system

You can easily install the Monitoring Codec in an existing system for an enhanced monitoring system.

Password security

You can set a password to secure against unauthorized connection.

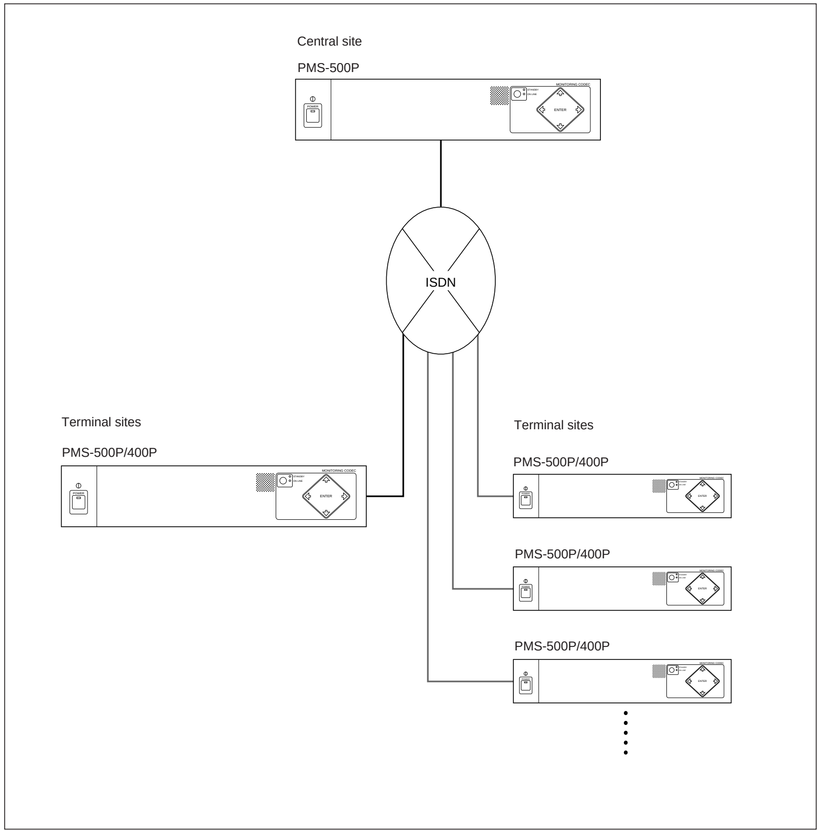
RS-232C interface

You can connect a computer to the Monitoring Codec via RS-232C interface. Controlling the Monitoring Codec from the computer enables easy and effective monitoring.

Configuration and Connections

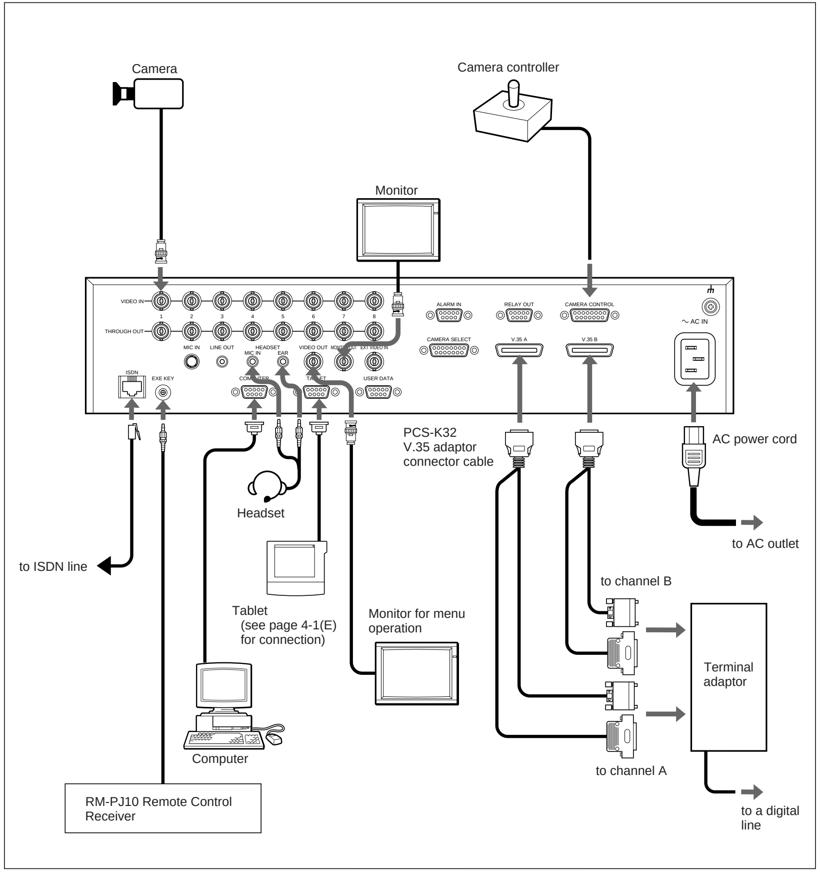
The basic system configuration of the Monitoring Codec is shown below. In normal configuration, it consists of the central and terminal sites. The terminal sites are monitored by the central site.
PMS-400P is used only as a terminal site.
PMS-500P can be used as either a central site or a terminal site.

System Configuration


Central site
PMS-500P
ISDN
Terminal sites
PMS-500P/400P
Terminal sites
PMS-500P/400P
PMS-500P/400P
PMS-500P/400P

Connections for the Central Site

The basic connections for the central site are shown below. (The illustration below is PMS-500P.)


Camera
Camera controller
Monitor
VIDEO IN
THROUGH OUT
ALARM IN
RELAY OUT
CAMERA CONTROL
CAMERA SELECT
V.35 A
V.35 B
AC IN
MIC IN
LINE OUT
HEADSET
MIC IN
EAR
VIDEO OUT
ISDN
EXE KEY
COMPUTER
TABLET
USER DATA
PCS-K32
V.35 adaptor
connector cable
AC power cord
to AC outlet
Headset
to ISDN line
to channel B
Tablet
(see page 4-1(E)
for connection)
Monitor for menu
operation
Terminal
adaptor
Computer
to channel A
RM-PJ10 Remote Control
Receiver
to a digital
line

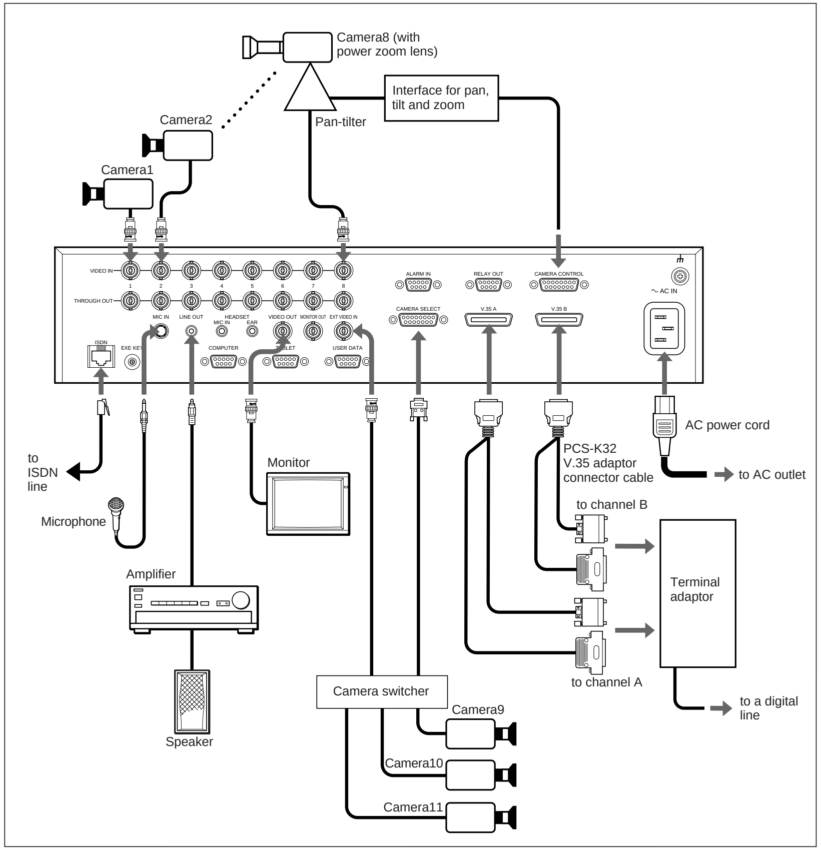
Note

If your headset jack does not match the Monitoring Codec jack, use a plug adaptor (not supplied).

http://getMANUAL.com

Connections for the Terminal Site

The basic connections for the terminal site are shown below. (The illustration below is PMS-500P.)


Camera8 (with power zoom lens)
Interface for pan, tilt and zoom
Pan-tilter
Camera2
Camera1
VIDEO IN
1
2
3
4
5
6
7
8
THROUGH OUT
MIC IN
LINE OUT
HEADSET
MIC IN
EAR
VIDEO OUT
MONITOR OUT
EXT VIDEO IN
ISDN
EXE KEY
COMPUTER
TABLET
USER DATA
ALARM IN
RELAY OUT
CAMERA CONTROL
CAMERA SELECT
V.35 A
V.35 B
~ AC IN
AC power cord
to AC outlet
PCS-K32 V.35 adaptor connector cable
to channel B
to channel A
Terminal adaptor
to a digital line
to ISDN line
Microphone
Monitor
Amplifier
Speaker
Camera switcher
Camera9
Camera10
Camera11

Note

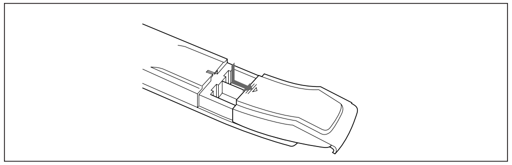
If you connect the microphone which has an XLR connector to the MIC IN jack, use the following audio conversion cabe (not supplied).

- When the microphone has a female connector, use EC-0.4CM (45 cm, 4-pin←→XLR (male)).
- When the microphone has a male connector, use EC-0.4CF (45 cm, 4-pin←→XLR (female))

Preparing the Remote Commander (Not Supplied)

Inserting the Batteries

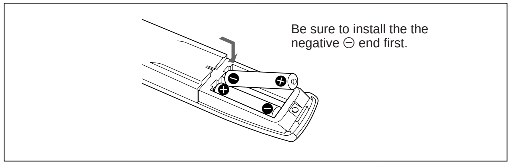
1 Remove the battery cover.



2 Insert two size AA (LR6) alkaline batteries with their polarities correctly aligned.

Caution

Be sure to install the negative ⊖ end of the battery in first. If you place the positive ⊕ end in first, there is a possibility of damaging the insulated film covering the battery and creating a short circuit.


Be sure to install the the negative ⊖ end first.

3 Replace the cover.

Battery life

When the batteries become weak or dead, the Remote Commander does not function.

Notes on batteries

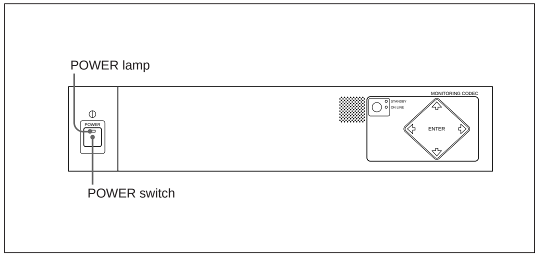
To avoid possible damage from battery leakage or corrosion, observe the following.

- Be sure to insert the batteries in the correct direction.
- Do not mix old and new batteries or different types of batteries.
- Do not attempt to charge dry-cell batteries.
- If you do not intend to use the Remote Commander for a long time, remove the batteries.

If battery leakage occurs, clean the battery compartment and replace all the batteries.

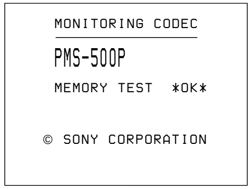
Turning the Monitoring Codec On and Off

Turning the Monitoring Codec On



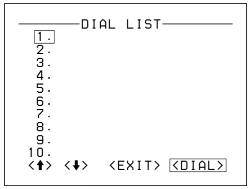
1 Turn on the devices connected to the Monitoring Codec.

2 Press the POWER switch.
The Monitoring Codec turns on and the POWER lamp (green) lights up. The monitor screen shows the following messages (The illustration below is for PMS-500P.)



```
MONITORING CODEC
PMS-500P
MEMORY TEST  *OK*

© SONY CORPORATION
```

Soon, the DIAL LIST menu appears.
You can call the remote sites registered on this DIAL LIST menu.



```
────────DIAL LIST────────
  1.
  2.
  3.
  4.
  5.
  6.
  7.
  8.
  9.
 10.
<↑> <↓>  <EXIT> <DIAL>
```

To go to the main menu

Move the cursor to <EXIT> using ←, ↑, → or ↓, then press ENTER.

Note

If you are not going to use the unit for a long time, turn off the POWER switch.

Turning the Monitoring Codec Off

Press the POWER switch.
The Monitoring Codec is turned off and the POWER lamp goes off.

Caution

Do not turn off the power when you are setting an item in the SETTING menu. It may damage the registered data.

Menus

When you operate the Monitoring Codec, display the menu on the monitor.

Note

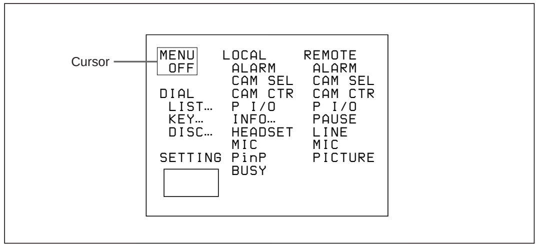
If an item in the meun is dimmed, that means the item cannot be selected.

To display the main menu

To display the main menu, press ENTER.
If you are using the Remote Commander, press the enter key on the Remote Commander.
If you are using the tablet (Wacom Art Pad II for WINDOWS, not supplied), select ENTER on the tablet.

Note

If you have set the main menu not to display, the menu is not displayed even if you press ENTER.
For details, see "Main menu display" on page 2-18 (E).


Cursor
MENU
OFF
DIAL
LIST…
KEY…
DISC…
SETTING
LOCAL
ALARM
CAM SEL
CAM CTR
P I/O
INFO…
HEADSET
MIC
PinP
BUSY
REMOTE
ALARM
CAM SEL
CAM CTR
P I/O
PAUSE
LINE
MIC
PICTURE

Main menu

LOCAL column: contains items which can be set for the local site.
REMOTE column: contains items which can be set for the remote site.

To remove the main menu

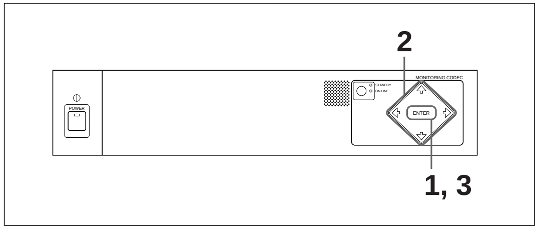
Select MENU OFF using ←, ↑, → or ↓, then press ENTER.
The main menu disappears from the monitor.

Operating the Menu

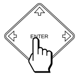
You can also operate the menu from the Remote Commander (not supplied) or tablet (not supplied.)
For details on tablet operations, see Chapter 4.

Basic menu operations are described below.

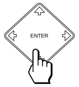
To operate from the Monitoring Codec


2
MONITORING CODEC
STANDBY
ON LINE
POWER
ENTER
1, 3

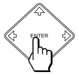
1 Press ENTER.
The main menu appears on the monitor.



2 Press ←, ↑, → or ↓ to move the cursor to the item you want to set.
The selected item becomes highlighted.

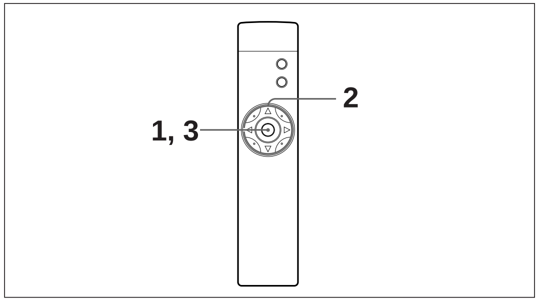


3 Press ENTER.
A menu for the selected item appears.



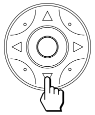
4 Make settings or adjustments on the item.

To operate from the Remote Commander (not supplied)



1 Press the enter key.
The main menu appears on the monitor.

2 Press ◀, ▲, ▶ or ▼ to move the cursor to the item you want to set.
The selected item becomes highlighted.



3 Press the enter key.
A menu for the selected item appears.

4 Make settings or adjustments on the item.

Operating From a Computer

You can connect a computer to the Monitoring Codec and control the Monitoring Codec from the computer.
For details on controlling the Monitoring Codec from a computer, consult your nearest authorized dealer.

Items in the Main Menu

The main menu items are listed below.
When you turn off the Monitoring Codec, all data are reset except for the items in the SETTING menu.
For details on items in the SETTING menu, see “Items in the SETTING Menu” on pages 2-1 (E) to 2-3 (E).

The main menu list (PMS-500P)

Item		**Description**	**Page**
MENU OFF		Removes the main menu.	1-9 (E)
DIAL	LIST...	Connects to a registered remote site.	3-1 (E)
	KEY...	Connects to an unregistered remote site.	3-2 (E)
	DISC...	Disconnects the line.	3-6 (E)
SETTING		Sets the preferences.	Chapter 2
LOCAL	ALARM	Verifies alarm signals and log file input into the local ALARM IN port.	3-17 (E), 3-18 (E)
	CAM SEL	Switches the picutre of a camera connected to the local site.	3-11 (E)
	CAM CTR	Controls the cameral controller connected to the local site.	3-13 (E)
	P I/O	Sets the bit value of the local RELAY OUT port.	3-19 (E)
	INFO...	Selects the information to superimpose on the screen.	3-16 (E)
	HEADSET	Selects headset volume.	3-7 (E)
	MIC	Selects microphone input level.	3-9 (E)
	P in P	Changes the position of the inset window.	3-15 (E)
	BUSY	Makes the line busy temporarily.	3-5 (E)
REMOTE	ALARM	Verifies alarm signals and log file input into the remote ALARM IN port.	3-17 (E), 3-18 (E)
	CAM SEL	Switches the picture of a camera connected to the remote site.	3-11 (E)
	CAM CTR	Controls the camera controller connected to the remote site.	3-13 (E)
	P I/O	Sets the bit value of the remote RELAY OUT port.	3-19 (E)
	PAUSE	Stops the camera auto scan temporarily.	3-12 (E)
	LINE	Selects the line volume of the remote site.	3-8 (E)
	MIC	Selects the microphone input level of the remote site.	3-10 (E)
	PICTURE	Selects picture quality.	3-14 (E)

The main menu list (PMS-400P)

Item		Description	Page
MENU OFF		Removes the main menu.	1-9 (E)
DIAL	LIST...	Connects to a registered remote site.	3-1 (E)
	KEY...	Connects to an unregistered remote site.	3-2 (E)
	DISC...	Disconnects the line.	3-6 (E)
SETTING		Sets the preferences.	Chapter 2
LOCAL	ALARM	Verifies alarm signals and log file input into the local ALARM IN port.	3-17 (E), 3-18 (E)
	CAM SEL	Switches the picutre of a camera connected to the local site.	3-11 (E)
	CAM CTR	Controls the cameral controller connected to the local site.	3-13 (E)
	P I/O	Sets the bit value of the local RELAY OUT port.	3-19 (E)
	INFO...	Selects the information to superimpose on the screen.	3-16 (E)
	HEADSET	Selects headset volume.	3-7 (E)
	MIC	Selects microphone input level.	3-9 (E)
REMOTE	ALARM	Verifies alarm signals and log file input into the remote ALARM IN port.	3-17 (E), 3-18 (E)
	P I/O	Sets the bit value of the remote RELAY OUT port.	3-19 (E)
	PAUSE	Stops the camera auto-scan temporarily.	3-12 (E)
	LINE	Selects the line volume of the remote site.	3-8 (E)
	MIC	Selects the microphone input level of the remote site.	3-10 (E)

The SETTING Menu

You can set the preferences for the Monitoring Codec in the SETTING menu.

Items in the SETTING Menu

The SETTING menu list (PMS-500P)

Item	Description	Page
ID NAME	Registers the ID name.	2-5 (E)
SITE NAME	Registers the site name.	2-6 (E)
TELEPHONE#	Registers the telephone number of the local site.	2-7 (E)
PASSWORD	Sets a password.	2-11 (E)
LIST (NORMAL)	Registers remote sites. You can connect to a remote site from this menu.	2-30 (E)
LIST (ALARM)	Registers remote sites to be connected when an alarm signal inputs.	2-33 (E)
LIST (RECEIVE)	Registers remote sites which have gained access to the local site.	2-36 (E)
CAMERA	Registers the total number of cameras.	2-27 (E)
CAMERA AUTO SCAN	Sets the camera auto scan time.	2-28 (E)
TIME OUT1	Sets the time-out period for the Monitoring Codec to disconnect the line.	2-29 (E)
TIME OUT2	Sets the time-out period for the Monitoring Codec to be in the standby mode.	2-29 (E)
AUDIO MIC LEVEL	Adjusts the line (headset) audio level and microphone input level.	2-14 (E)
AUDIO-HEADSET	Selects the line (headset) volume. (HIGH/LOW/OFF)	2-15 (E)
MIC	Selects the microphone input level. (HIGH/LOW/OFF)	2-16 (E)
RINGER	Sets the ringer on or off.	2-18 (E)
KEY SOUND	Sets sound on or off when you press the keys.	2-18 (E)
PICTURE MODE	Selects the picture quality.	2-17 (E)
PinP	Selects the inset window to display or not and selects the position of the inset window.	2-20 (E)
CALENDAR	Sets the date and time.	2-12 (E)
MENU	Prevents the unit from displaying the main menu when using ENTER on the Monitoring Codec or the enter key on the Remote Commander.	2-18 (E)
ALARM IN	Writes the comment for the ALARM IN port.	2-21 (E)
PARALLEL I/O	Writes the comment for the RELAY OUT port.	2-22 (E)
CAMERA CONTROL	Sets input/output of the CAMERA CONTROL port.	2-23 (E)
COMPUTER	Sets up the COMPUTER port.	2-23 (E)
RS-232C 1	Sets up the TABLET port.	2-24 (E)
RS-232C 2	Sets up the USER DATA port.	2-25 (E)
VERSION	Displays the software version.	2-19 (E)
MAINTENANCE	Diagnoses overall system functioning. Sets the second telephone number.	2-38 (E), 3-4 (E)

(Continued)

Item	Description	Page
RECEIVE CHECK	Checks whether the incoming call number and the remote site are the same.	2-37 (E)
DIAG	Diagnoses particular system components.	2-39 (E)
ANSWERING MODE	Sets the answering mode to auto or manual.	2-13 (E)
COMMUNICATION MODE	Sets the line rate and the V.35 A/B ports.	2-10 (E)
BRI MISC	Consult your nearest authorized dealer.	—

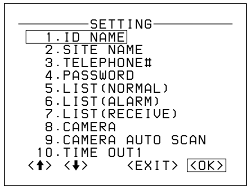
The SETTING menu list (PMS-400P)

Item	Description	Page
ID NAME	Registers the ID name.	2-5 (E)
SITE NAME	Registers the site name.	2-6 (E)
TELEPHONE#	Registers the telephone number of the local site.	2-7 (E)
PASSWORD	Sets a password.	2-11 (E)
LIST (NORMAL)	Registers remote sites. You can connect to a remote site from this menu.	2-30 (E)
LIST (ALARM)	Registers remote sites to be connected when an alarm signal inputs.	2-33 (E)
LIST (RECEIVE)	Registers remote sites which have gained access to the local site.	2-36 (E)
CAMERA	Registers the total number of cameras.	2-27 (E)
CAMERA AUTO SCAN	Sets the camera auto scan time.	2-28 (E)
TIME OUT1	Sets the time-out period for the Monitoring Codec to disconnect the line.	2-29 (E)
TIME OUT2	Sets the time-out period for the Monitoring Codec to be in the standby mode.	2-29 (E)
AUDIO MIC LEVEL	Adjusts the line (headset) audio level and microphone input level.	2-14 (E)
AUDIO-HEADSET	Selects the line (headset) volume. (HIGH/LOW/OFF)	2-15 (E)
MIC	Selects the microphone input level. (HIGH/LOW/OFF)	2-16 (E)
RINGER	Sets the ringer on or off.	2-18 (E)
KEY SOUND	Sets sound on or off when you press the keys.	2-18 (E)
CALENDAR	Sets the date and time.	2-12 (E)
MENU	Prevents the unit from displaying the main menu when using ENTER on the Monitoring Codec or the enter key on the Remote Commander.	2-18 (E)
ALARM IN	Writes the comment for the ALARM IN port.	2-21 (E)
PARALLEL I/O	Writes the comment for the RELAY OUT port.	2-22 (E)
CAMERA CONTROL	Selects input/output of the CAMERA CONTROL port.	2-23 (E)
COMPUTER	Sets up the COMPUTER port.	2-23 (E)
RS-232C 1	Sets up the TABLET port.	2-24 (E)
RS-232C 2	Sets up the USER DATA port.	2-25 (E)
VERSION	Displays the software version.	2-19 (E)
MAINTENANCE	Diagnoses overall system functioning. Sets the second telephone number.	2-38 (E), 3-4 (E)

Item	Description	Page
RECEIVE CHECK	Checks whether the incoming call number and the remote site are the same.	2-37 (E)
DIAG	Diagnoses particular system components.	2-39 (E)
ANSWERING MODE	Sets the answering mode to auto or manual.	2-13 (E)
COMMUNICATION MODE	Sets the line rate and the V.35 A/B ports.	2-10 (E)
BRI MISC	Consult your nearest authorized dealer.	—

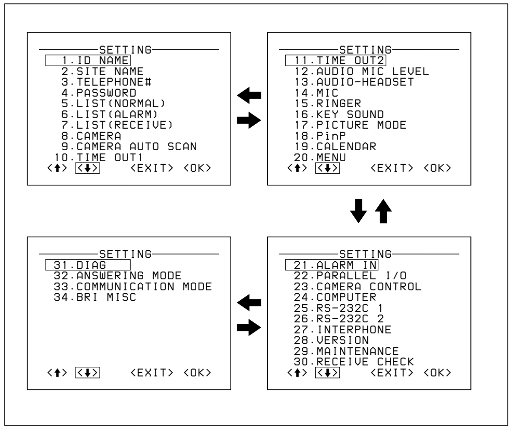
Selecting an Item in the SETTING Menu

1 Select SETTING from the main menu.
The SETTING menu appears.



```
─────────SETTING──────────
   1.ID NAME
   2.SITE NAME
   3.TELEPHONE#
   4.PASSWORD
   5.LIST(NORMAL)
   6.LIST(ALARM)
   7.LIST(RECEIVE)
   8.CAMERA
   9.CAMERA AUTO SCAN
  10.TIME OUT1
 <↑> <↓>     <EXIT> <OK>
```

To move from page to page on the SETTING menu
Move the cursor to <↓> using ←. Each time you press ENTER, the next SETTING menu is displayed.
Move the cursor to <↑> using ←. Each time you press ENTER, the previous SETTING menu is displayed.



```
──────SETTING──────
   1.ID NAME
   2.SITE NAME
   3.TELEPHONE#
   4.PASSWORD
   5.LIST(NORMAL)
   6.LIST(ALARM)
   7.LIST(RECEIVE)
   8.CAMERA
   9.CAMERA AUTO SCAN
  10.TIME OUT1
 <↑> <↓>    <EXIT> <OK>
```

```
──────SETTING──────
  11.TIME OUT2
  12.AUDIO MIC LEVEL
  13.AUDIO-HEADSET
  14.MIC
  15.RINGER
  16.KEY SOUND
  17.PICTURE MODE
  18.PinP
  19.CALENDAR
  20.MENU
 <↑> <↓>    <EXIT> <OK>
```

```
──────SETTING──────
  21.ALARM IN
  22.PARALLEL I/O
  23.CAMERA CONTROL
  24.COMPUTER
  25.RS-232C 1
  26.RS-232C 2
  27.INTERPHONE
  28.VERSION
  29.MAINTENANCE
  30.RECEIVE CHECK
 <↑> <↓>    <EXIT> <OK>
```

```
──────SETTING──────
  31.DIAG
  32.ANSWERING MODE
  33.COMMUNICATION MODE
  34.BRI MISC






 <↑> <↓>    <EXIT> <OK>
```

2 Select the item to be set using ↑ or ↓, then press ENTER.
The screen with available settings for each item appears.

To return to the main menu

Select <EXIT> using ← or →, then press ENTER.
The main menu appears.

Registering the Local Site Information

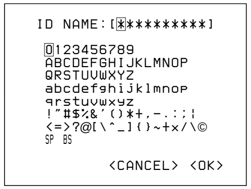
Before you use the Monitoring Codec, register a site name and telephone number. You can also set a password to deny access to general calling parties other than specific calling parties.

Select SETTING from the main menu to display the SETTING menu.

Naming the Monitoring Codec (ID Name)

An ID name is used only in system management for commenting purposes. It is not used for communication among Monitoring Codec units.

1 Select 1. ID NAME from the SETTING menu.
The following screen appears.



```
  ID NAME:[**********]

   0123456789
   ABCDEFGHIJKLMNOP
   QRSTUVWXYZ
   abcdefghijklmnop
   qrstuvwxyz
   !"#$%&'()*+,-.:;¦
   <=>?@[\^_]{}~+x/\©
   SP BS

          <CANCEL> <OK>
```

2 Select characters for the ID name using ←, ↑, → or ↓, then press ENTER character by character.
The selected characters are entered in the ID name box.
- The ID name can be up to 10 characters long.
- Select SP for a space.
- An asterisk is displayed where nothing is entered.

3 After entering the ID name, move the cursor to <OK> using ↓, then press ENTER.
The ID name is registered and the SETTING menu appears.

To correct the characters

Move the cursor to BS (backspace) and press ENTER. The last character is erased.

To cancel the registration

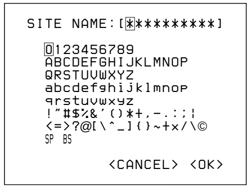
Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

Registering the Local Site Information

Naming the Monitoring Codec (Site Name)

The site name registered at your own site is displayed in the remote site monitor.

1 Select 2. SITE NAME from the SETTING menu.
The following screen appears.



```
SITE NAME:[**********]

 0123456789
 ABCDEFGHIJKLMNOP
 QRSTUVWXYZ
 abcdefghijklmnop
 qrstuvwxyz
 !"#$%&'()*+,-.:;¦
 <=>?@[\^_]{}~+x/\©
 SP BS

          <CANCEL> <OK>
```

2 Press 🡇 and select the characters for the site name using 🡄, 🡅, 🡆 or 🡇, then press ENTER character by character.
The selected characters are entered in the site name box.
- The site name can be up to 20 characters long.
- Select SP for a space.
- An asterisk is displayed where nothing is entered.

3 After entering the site name, move the cursor to <OK> using 🡇, then press ENTER.
The site name is registered and the SETTING menu appears.

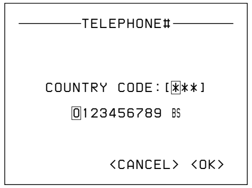
To correct the characters
Move the cursor to BS (backspace) and press ENTER. The last character is erased.

To cancel the registration
Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

Registering the Telephone Number and Subaddress

Note
SPID registration is only for users in the USA.
For details on SPIDs, see "What's a SPID" on page 2-9 (E).

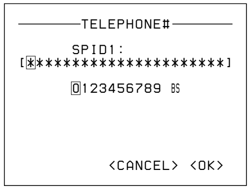
1 Select 3. TELEPHONE # from the SETTING menu.
The following screen appears.



```
────────TELEPHONE#────────


   COUNTRY CODE:[***]
     0123456789 BS


          <CANCEL> <OK>
```

2 Select your country code using 🡄 or 🡆, then press ENTER one by one.
The code is entered in the country code box.
- Enter the country code from the left row.
- Do not enter the first or second zero (e.g., enter "1" for the USA.)
- An asterisk is displayed where nothing is entered.

3 After entering the country code, move the cursor to <OK> using 🡇, then press ENTER.
The following screen appears.



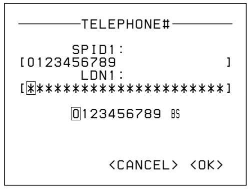
```
────────TELEPHONE#────────
     SPID1:
[**********************]

     0123456789 BS



          <CANCEL> <OK>
```

4 Select your SPID (service profile identifiers) for B1-channel using 🡄 or 🡆, then press ENTER one by one.
The selected number is entered in the SPID1 box.
- SPID setting is only for users in the USA.
- An asterisk is displayed where nothing is entered.

(Continued)

Registering the Local Site Information

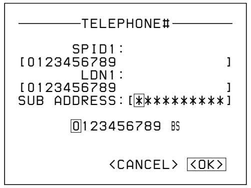
5 After entering the SPID number, move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
───────TELEPHONE#───────
       SPID1:
[0123456789            ]
        LDN1:
[**********************]
    0123456789 BS

          <CANCEL> <OK>
```

6 Select your local directory number for B1-channel using ← or →, then press ENTER one by one.
The selected number is entered in the LDN1 box.
- An asterisk is displayed where nothing is entered.

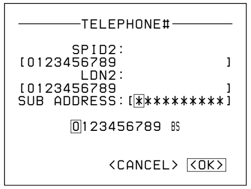
7 After entering the local directory number, move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
───────TELEPHONE#───────
       SPID1:
[0123456789            ]
        LDN1:
[0123456789            ]
SUB ADDRESS:[**********]
    0123456789 BS

          <CANCEL> <OK>
```

8 Select a subaddress for B1-channel using ← or →, then press ENTER one by one.
The selected number is entered in the subaddress box.
- A subaddress can be up to 10 digits.
- An asterisk is displayed where nothing is entered.

9 After entering the subaddress, move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
───────TELEPHONE#───────
       SPID2:
[0123456789            ]
        LDN2:
[0123456789            ]
SUB ADDRESS:[**********]
    0123456789 BS

          <CANCEL> <OK>
```

10 Repeat steps **4** to **9** to register SPID 2, LDN 2 and the subaddress for B2-channel.
The setting is registered and the SETTING menu appears.

To correct the characters

Move the cursor to BS (backspace) and press ENTER. The last character is erased.

To cancel the registration

Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

What's a SPID?

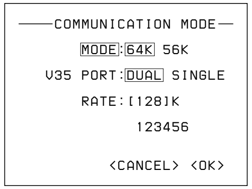
SPIDs are Service Profile Identifiers. SPIDs are used to identify the ISDN device and allow a large uniformity for setting the ISDN device with a switcher.

When the system connects to the following types of network switcher, you can use ISDN lines and will have to register the SPID.
- AT&T 5ESS
- Network switcher software: 5E8 or later (for National ISDN-1 and National ISDN-2)
- Northern Telecom (NT1) DMS-100
- Network switcher software: BCS34 or later (for National ISDN-1 and National ISDN-2)

Setting the Communication Mode

When your country or region has a 56 Kbps line rate, set the ISDN line rate.
When you connect via the V.35 interface, set the number of channels and line rate.

1 Select 33. COMMUNICATION MODE from the SETTING menu.
The following screen appears.



```
———COMMUNICATION MODE——
       MODE:64K 56K
   V35 PORT:DUAL SINGLE
       RATE:[128]K
             123456

          <CANCEL> <OK>
```

2 When you connect the remote site via ISDN, select the line rate for sending and receiving using ← or →, then press ↓.
64K: via normal ISDN line.
56K: specific regions or countries with a 56 Kbps ISDN line rate.

3 When you connect the remote site via the V.35 interface, select the number of channels using ← or →, then press ↓.
DUAL: when you use both the CHANNEL A and B ports of the terminal adaptor.
SINGLE: when you use only the CHANNEL A port of the terminal adaptor.

4 Select the line rate of the V.35 interface for receiving using ← or →, then press ↓.
- When you use both the CHANNEL A and B ports of the terminal adaptor, set the line rate to 128 K.
- When you only use the CHANNEL A port of the terminal adaptor, set the line rate between 64 and 384 K.

5 After entering the line rate, move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the registration

Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

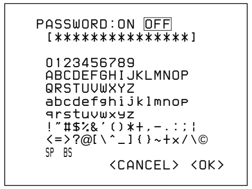
Notes

- When you connect via the V.35 interface, the terminal adaptor is required.
- When you connect via the V.35 interface, you need to set the line rates of the calling party and called party to the same rate.
- Turn on the terminal adaptor after turning on the PMS-500P/400P.

Setting the Password

You can set a password for security purposes. (If you do not set a password, you can connect to video-conference.)

1 Select 4. PASSWORD from the SETTING menu.
The following screen appears.



```
PASSWORD:ON OFF
 [***************]

 0123456789
 ABCDEFGHIJKLMNOP
 QRSTUVWXYZ
 abcdefghijklmnop
 qrstuvwxyz
 !"#$%&'()*+,-.:;¦
 <=>?@[\^_]{}~+x/\©
 SP BS
          <CANCEL> <OK>
```

2 Select ON or OFF using ← or → to determine whether to set a password or not, then press ↓.
ON: Sets the password.
OFF: Does not set the password, but you can still register a password.

3 Select characters for the password using ←, ↑, → or ↓, then press ENTER character by character.
The selected characters are entered in the password box.
- The password can be up to 15 characters long.
- Select SP for a space.
- An asterisk is displayed where nothing is entered.

4 After entering the password, move the cursor to <OK> using ↓, then press ENTER.
The password is registered and the SETTING menu appears.

To correct the characters

Move the cursor to BS (backspace) and press ENTER. The last character is erased.

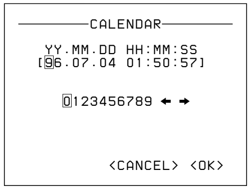
To cancel the registration

Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

http://getMANUAL.com

Setting the Date and Time

1 Select 19. CALENDAR from the SETTING menu.
The following screen appears.



```
CALENDAR
YY.MM.DD HH:MM:SS
[96.07.04 01:50:57]

0123456789 ← →

<CANCEL> <OK>
```

2 If you set all the date and time, go to Step **3**.
To select the item of date or time you want to set, select ← or → using the ← or → key and press ENTER repeatedly to move the cursor.
The cursor moves among the date (YY.MM.DD) and time (HH:MM:SS) cyclically.

YY	MM	DD	HH	MM	SS
Year	Month	Date	Hour	Minute	Second

3 Select a number using ← or →, then press ENTER.
The selected number is entered in the box and the cursor moves to the right.

4 Repeat Steps **2** and **3** to enter the date and time.

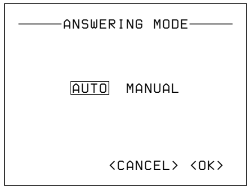
5 After entering the date and time, move the cursor to <OK> using ↓, then press ENTER.
The date and time are set and the SETTING menu appears.

To cancel the operation
Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menua appears.

Setting the Answering Mode

You can set the answering mode to receive an incoming call automatically or manually.

1 Select 32. ANSWERING MODE from the SETTING menu.
The following screen appears.



```
ANSWERING MODE

AUTO   MANUAL

<CANCEL> <OK>
```

2 Select AUTO or MANUAL using ← or →.
The selected setting becomes highlighted.

Setting	Meaning
AUTO	Receives an incoming call automatically.
MANUAL	Before receiving an incoming call, the message “There is an incoming video call...” appears on the monitor. If you want to receive that call, press ENTER.

3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the operation
Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menu appears.

Basic Setting

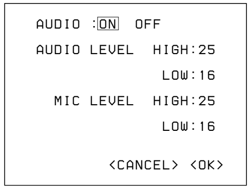
This section describes the basic settings of the Monitoring Codec.

Select SETTING from the main menu to display the SETTING menu.

Adjusting the Line (Headset) Audio Level and the Microphone Input Level

You can register the line (headset) audio level and microphone input level in the HIGH and the LOW positions.
If you set AUDIO to OFF, the capacity allocated to the audio signal is allocated to the video signal. In this case, the picture quality improves.

1 Select 12. AUDIO MIC LEVEL from the SETTING menu.
The following screen appears.



```
  AUDIO :ON  OFF
  AUDIO LEVEL  HIGH:25
                LOW:16
    MIC LEVEL  HIGH:25
                LOW:16

          <CANCEL> <OK>
```

2 Select ON or OFF using ← or →, then press ↓.

3 Adjust the audio level in the HIGH position using ← or →.
You can adjust the audio level between 01 and 32.

4 Move the cursor to AUDIO LEVEL LOW using ↓, then adjust the audio level in the LOW position using ← or →.
You can adjust the audio level between 01 and 32.

5 Move the cursor to MIC LEVEL HIGH using ↓, then adjust the microphone input level in the HIGH position using ← or →.
You can adjust the microphone input level between 01 and 32.

6 Move the cursor to MIC LEVEL LOW using ↓, then adjust the microphone input level in the LOW position using ← or →.
You can adjust the microphone input level between 01 and 32.

7 Move the cursor to <OK> using ↓, then press ENTER.
The audio level and microphone input level are set and the SETTING menu appears.

To cancel the operation

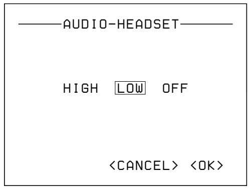
Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menu appears.

Note

If you set a low level in the HIGH position and a high level in the LOW position, low level is output (or input) regardless of selecting HIGH and high level is output (or input) regardless of selecting LOW.

Selecting the Line (Headset) Volume out of HIGH, LOW or OFF

1 Select 13. AUDIO-HEADSET from the SETTING menu.
The following screen appears.



```
 ─────AUDIO-HEADSET──────


      HIGH  LOW  OFF



          <CANCEL> <OK>
```

2 Select HIGH, LOW or OFF using ← or →.
The selected setting becomes highlighted.

Setting	Meaning
HIGH	The volume is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
LOW	The volume is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF	Sound is muted.

For details on 12. AUDIO MIC LEVEL, see “Adjusting Line (Headset) Audio Level and Microphone Input Level” on page 2-14 (E).

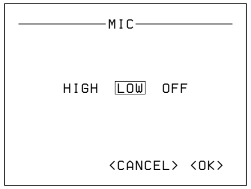
3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the operation

Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menu appears.

Selecting the Microphone Input Level out of HIGH, LOW or OFF

1 Select 14. MIC from the SETTING menu.
The following screen appears.



2 Select HIGH, LOW or OFF using ← or →.
The selected setting becomes highlighted.

Setting	Meaning
HIGH	The input level is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
LOW	The input level is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF	No sound is input.

For details on 12. AUDIO MIC LEVEL, see “Adjusting Line (Headset) Audio Level and Microphone Input Level” on page 2-14 (E).

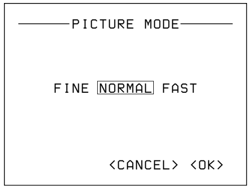
3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the operation

Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menu appears.

Selecting the Picture Quality

1 Select 17. PICTURE MODE from the SETTING menu.
The following screen appears.



2 Select the picture quality using ← or →.
The selected setting becomes highlighted.

Setting	Meaning
FINE	Gives picture quality preference than picture motion.
NORMAL	Middle setting between FINE and FAST.
FAST	Gives picture motion preference than picture quality.

3 Move the cursor to <OK> using ↓, then press ENTER.
The picture quality is set and the SETTING menu appears.

To cancel the operation

Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menu appears.

Other Settings

Ringer

You can set the ringer sound on or off.
Select 15. RINGER from the SETTING menu and select ON or OFF using ← or →.

Setting	Meaning
ON	Ringer is turned on.
OFF	Ringer is turned off.

Move the cursor to <OK> using ↓ and press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the operation
Move the cursor to <CANCEL> without selecting <OK> and press ENTER.

Key sound

You can make a sound when you press a key.
Select 16. KEY SOUND from the SETTING menu and select ON or OFF using ← or →.

Setting	Meaning
ON	Key sound is turned on.
OFF	Key sound is turned off.

Move the cursor to <OK> using ↓ and press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the operation
Move the cursor to <CANCEL> without selecting <OK> and press ENTER.

Main menu display

You can set the unit to prevent it from displaying the main menu when ENTER on the Monitoring Codec or the enter key on the Remote Commander is pressed.
Select 20. MENU from the SETTING menu and select ON or OFF using ← or →.

Setting	Meaning
ON	Main menu is displayed.
OFF	Main menu is not displayed.

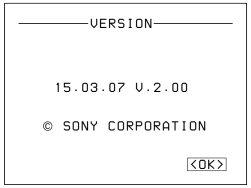
Move the cursor to <OK> using ↓ and press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the operation
Move the cursor to <CANCEL> without selecting <OK> and press ENTER.

To display the software version

You can check the software version.

1 Select 28. VERSION from the SETTING menu.
The following screen appears.



```
————————VERSION————————

    15.03.07 V.2.00

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                  <OK>
```

2 After checking the software version, press ENTER.
The SETTING menu appears.

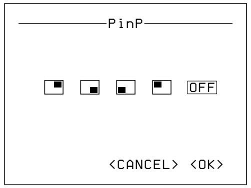
Inset Window Setting

You can set the unit to display the inset window and select the corner in which the inset window appears on.

Select SETTING from the main menu to display the SETTING menu.

Selecting the Position of the Inset Window

1 Select 18. PinP from the SETTING menu.
The following screen appears.



```
──────────PinP──────────

    ▝  ▗  ▖  ▘  OFF

          <CANCEL> <OK>
```

2 Select the position of the inset window using ← or →.
The selected setting becomes highlighted.

Setting	Meaning
▝	The inset window is displayed in the upper-right corner.
▗	The inset window is displayed in the lower-right corner.
▖	The inset window is displayed in the lower-left corner.
▘	The inset window is displayed in the upper-left corner.
OFF	The inset window is not displayed.

3 Move the cursor to <OK> using ↓, then press ENTER.
The inset window position is set and the SETTING menu appears.

To cancel the operation
Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menu appears.

Port Setting

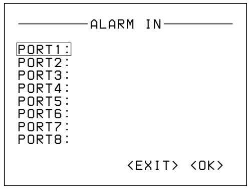
This section describes how to set the ALARM IN, RELAY OUT, CAMERA CONTROL, COMPUTER, TABLET, USER DATA ports.

Select SETTING from the main menu to display the SETTING menu.

Setting Up the ALARM IN Port

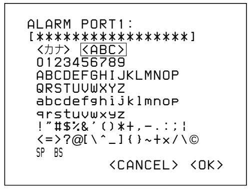
You can write comments for the ALARM IN port to identify what is connected to each port.

1 Select 21. ALARM IN from the SETTING menu.
The following screen appears.



```
────────ALARM IN────────

PORT1:
PORT2:
PORT3:
PORT4:
PORT5:
PORT6:
PORT7:
PORT8:

             <EXIT> <OK>
```

2 Select the port number (PORT1 – 8) using ↑ or ↓, then press ENTER.
The following screen appears.



```
ALARM PORT1:
[*****************]
 <カナ> <ABC>
 0123456789
 ABCDEFGHIJKLMNOP
 QRSTUVWXYZ
 abcdefghijklmnop
 qrstuvwxyz
 !"#$%&'()*+,-.:;¦
 <=>?@[\^_]{}~+x/\©
 SP BS
            <CANCEL> <OK>
```

3 Press ↓ and select characters using ←, ↑, → or ↓, then press ENTER character by character.
Selected characters are entered in the box.
- A comment can be up to 17 characters long.
- Select SP for spaces.
- An asterisk is displayed where nothing is entered.

4 After writing a comment, move the cursor to <OK> using ↓, then press ENTER.
The comment is registered and the SETTING menu appears.

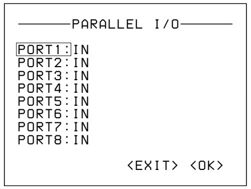
To correct the characters
Move the cursor to BS (backspace) and press ENTER. The last character is erased.

To cancel the registration
Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

Setting Up the RELAY OUT Port

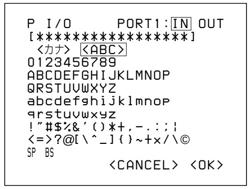
You can select input or output for the RELAY OUT port and write comments for the port to identify what is connected to each port.

1 Select 22. PARALLEL I/O from the SETTING menu.
The following screen appears.



```
——————PARALLEL I/O——————
PORT1:IN
PORT2:IN
PORT3:IN
PORT4:IN
PORT5:IN
PORT6:IN
PORT7:IN
PORT8:IN
              <EXIT> <OK>
```

2 Select the port number (PORT1 – 8) using ⬆ or ⬇, then press ENTER.
The following screen appears.



```
P I/O      PORT1:IN OUT
[*****************]
 <カナ> <ABC>
0123456789
ABCDEFGHIJKLMNOP
QRSTUVWXYZ
abcdefghijklmnop
qrstuvwxyz
!"#$%&'()*+,-.:;¦
<=>?@[\^_]{}~+x/\©
SP BS
            <CANCEL> <OK>
```

3 Select IN or OUT using ⬅ or ➡, then press ⬇.
The cursor moves to <ABC>.

4 Press ⬇ and select characters using ⬅, ⬆, ➡ or ⬇, then press ENTER character by character.
Selected characters are entered in the box.
- A comment can be up to 17 characters long.
- Select SP for a space.
- An asterisk is displayed where nothing is entered.

5 After writing a comment, move the cursor to <OK> using ⬇, then press ENTER.
The setting is registered and the SETTING menu appears.

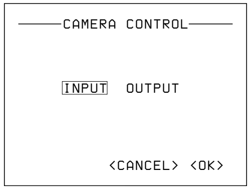
To correct the characters
Move the cursor to BS (backspace) and press ENTER. The last character is erased.

To cancel the registration
Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

Setting Up the CAMERA CONTROL Port

You can select input or output of the CAMERA CONTROL port.

1 Select 23. CAMERA CONTROL from the SETTING menu.
The following screen appears.



```
————CAMERA CONTROL————



     INPUT   OUTPUT




            <CANCEL> <OK>
```

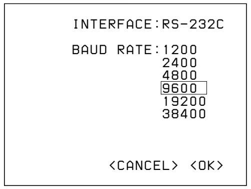
2 Select INPUT or OUTPUT using ⬅ or ➡.

3 Move the cursor to <OK> using ⬇, then press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the operation
Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menu appears.

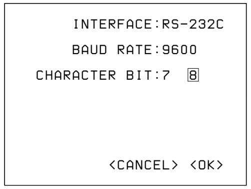
Setting Up the COMPUTER Port

1 Select 24. COMPUTER from the SETTING menu.
The following screen appears.



```
      INTERFACE:RS-232C

      BAUD RATE:1200
                2400
                4800
                9600
                19200
                38400



            <CANCEL> <OK>
```

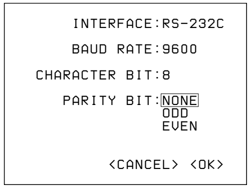
2 Select the baud rate using ⬆ or ⬇, then press ENTER.
The following screen appears.



```
      INTERFACE:RS-232C

      BAUD RATE:9600

   CHARACTER BIT:7  8





            <CANCEL> <OK>
```

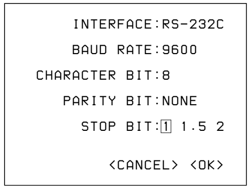
(Continued)

3 Select the character bit using ← or →, then press ENTER.
The following screen appears.



```
      INTERFACE:RS-232C
      BAUD RATE:9600
  CHARACTER BIT:8
     PARITY BIT:NONE
                ODD
                EVEN

          <CANCEL> <OK>
```

4 Select the parity bit using ↑ or ↓, then press ENTER.
The following screen appears.



```
      INTERFACE:RS-232C
      BAUD RATE:9600
  CHARACTER BIT:8
     PARITY BIT:NONE
       STOP BIT:1  1.5  2

          <CANCEL> <OK>
```

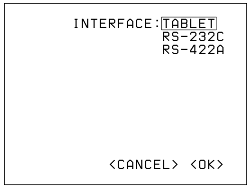
5 Select the stop bit using ← or →, then press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the operation

Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menu appears.

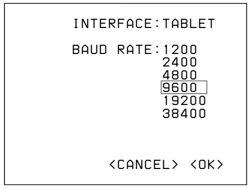
Setting Up the TABLET Port

1 Select 25. RS-232C 1 from the SETTING menu.
The following screen appears.



```
      INTERFACE:TABLET
                RS-232C
                RS-422A

          <CANCEL> <OK>
```

2 Select the interface using ↑ or ↓, then press ENTER.
If you are using the tablet (WACOM Art Pad II for Windows, not supplied), select TABLET.
The following screen appears.



```
      INTERFACE:TABLET
      BAUD RATE:1200
                2400
                4800
                9600
                19200
                38400

          <CANCEL> <OK>
```

3 Select the baud rate using ↑ or ↓, then press ENTER.

4 Select the character bit using ← or →, then press ENTER.

5 Select the parity bit using ↑ or ↓, then press ENTER.

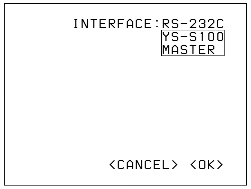
6 Select the stop bit using ← or →, then press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the operation

Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and returns to the SETTING menu.

Setting Up the USER DATA Port

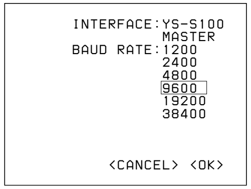
1 Select 26. RS-232C 2 from the SETTING menu.
The following screen appears.



```
      INTERFACE:RS-232C
                YS-S100
                MASTER

          <CANCEL> <OK>
```

(Continued)

2 Select the interface using ↑ or ↓, then press ENTER.
If you are using the YS-S100 Camera Switcher (not supplied), select YS-S100 MASTER.
The following screen appears.



```
INTERFACE:YS-S100
          MASTER
BAUD RATE:1200
          2400
          4800
          9600
          19200
          38400


     <CANCEL> <OK>
```

3 Select the baud rate using ↑ or ↓, then press ENTER.

4 Select the character bit using ← or →, then press ENTER.

5 Select the parity bit using ↑ or ↓, then press ENTER.

6 Select the stop bit using ← or →, then press ENTER.
The setting is registered and the SETTING menu appears.

To cancel the operation

Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menu appears.

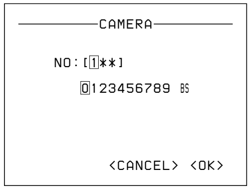
Registering the Number of Cameras

You need to register the number of cameras (up to 256) connected to the Monitoring Codec to monitor all of the camera pictures. You cannot switch to all of the pictures if you don’t register the number of cameras.

Select SETTING from the main menu to display the SETTING menu.

Registering the Number of Cameras Connected to the Monitoring Codec

1 Select 8. CAMERA from the SETTING menu.
The following screen appears.



```
————————CAMERA————————

   NO:[1**]
      0123456789 BS



        <CANCEL> <OK>
```

2 Select the number of cameras connected to the Monitoring Codec using ← or →, then press ENTER.
The selected number is entered in the box.
- An asterisk is displayed where nothing is entered.

3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

To correct the characters

Move the cursor to BS (backspace) and press ENTER. The last character is erased.

To cancel the registration

Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

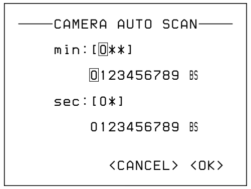
Switching Pictures Automatically

You can automatically switch among the pictures (up to 256 cameras) at regular intervals.

Select SETTING from the main menu to display the SETTING menu.

Setting the Time When the Pictures are Switched

1 Select 9. CAMERA AUTO SCAN from the SETTING menu.
The following screen appears.



```
———CAMERA AUTO SCAN———
   min:[0**]
       0123456789 BS
   sec:[0*]
       0123456789 BS

         <CANCEL> <OK>
```

2 Select the minutes using ← or →, then press ENTER one by one.
The selected number is entered in the minutes box.
Press ↓ and select the seconds using ← or →, then press ENTER one by one.
The selected number is entered in the seconds box.
- An asterisk is displayed where nothing is entered.
- If you select 0 for minutes and seconds, the pictures are not switched automatically.

3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

To correct the characters
Move the cursor to BS (backspace) and press ENTER. The last character is erased.

To cancel the registration
Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

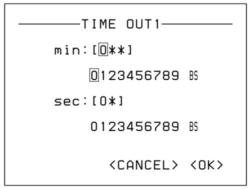
Disconnecting From the Line Automatically/ Turning to the Standby Mode Automatically

You can set the system to disconnect the line automatically or turn to standby mode automatically to save power.

Select SETTING from the main menu to display the SETTING menu.

Setting the Time When the Unit Disconnects From the Line or Turning to the Standby Mode

1 To set the time when the unit disconnects from the line, select 10. TIME OUT 1 from the SETTING menu.
To set the time when the unit turns to the standby mode, select 11. TIME OUT 2 from the SETTING menu.
The following screen appears. (The illustration below is for selecting 10. TIME OUT1.)



```
————TIME OUT1————
   min:[0**]
       0123456789 BS
   sec:[0*]
       0123456789 BS

         <CANCEL> <OK>
```

2 Select the minutes using ← or →, then press ENTER one by one.
The selected number is entered in the minutes box.
Press ↓ and select the seconds using ← or →, then press ENTER one by one.
The selected number is entered in the seconds box.
- An asterisks is displayed where nothing is entered.
- If you select 0 for minutes and seconds, the unit does not automatically disconnect from the line or turn to the standby mode.

3 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the SETTING menu appears.

To correct the characters
Move the cursor to BS (backspace) and press ENTER. The last character is erased.

To cancel the registration
Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

To turn on the power from the standby mode
- Press any key on the Monitoring Codec.
- Press POWER ON on the Remote Commander (not supplied).
- Select any location on the tablet (not supplied).

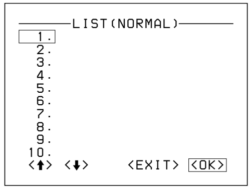
Registering Called Parties

To connect from the LIST (NORMAL) menu, you need to register each party you want to connect with. You can register up to 128 parties.

Select SETTING from the main menu to display the SETTING menu.

Registering Your Called Party Information

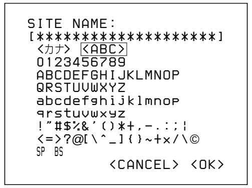
1 Select 5. LIST (NORMAL) from the SETTING menu.
The LIST (NORMAL) menu appears.



```
─────LIST(NORMAL)─────
 1.
 2.
 3.
 4.
 5.
 6.
 7.
 8.
 9.
10.
<⬆> <⬇>    <EXIT> <OK>
```

To move from page to page on the LIST (NORMAL) menu
Move the cursor to <⬇> using ⬅. Each time you press ENTER, the next LIST (NORMAL) menu is displayed.
Move the cursor to <⬆> using ⬅. Each time you press ENTER, the previous LIST (NORMAL) menu is displayed.

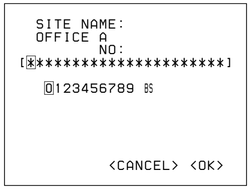
2 Select the list number to register a called party using ⬆ or ⬇, then press ENTER.
The following screen appears.



```
SITE NAME:
[*********************]
 <カナ> <ABC>
 0123456789
 ABCDEFGHIJKLMNOP
 QRSTUVWXYZ
 abcdefghijklmnop
 qrstuvwxyz
 !”#$%&’()*+,-.:;¦
 <=>?@[\^_]{}~+x/\©
 SP BS
          <CANCEL> <OK>
```

3 Press ⬇ and select the site name using ⬅ or ➡, then press ENTER character by character.
The selected characters are entered in the site name box.
- A site name can be up to 20 characters long.
- Select SP for spaces.
- An asterisk is displayed where nothing is entered.

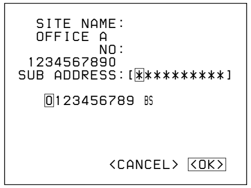
4 Move the cursor to <OK> using ⬇, then press ENTER.
The following screen appears.



```
  SITE NAME:
  OFFICE A
         NO:
[**********************]

   0123456789 BS



           <CANCEL> <OK>
```

5 Enter the telephone number using ⬅ or ➡, then press ENTER one by one.
The selected numbers are entered in the telephone number box.
- A telephone number can be up to 22 digits.
- An asterisk is displayed where nothing is entered.

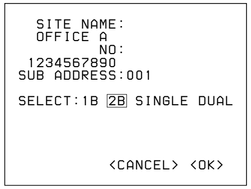
6 Move the cursor to <OK> using ⬇, then press ENTER.
The following screen appears.



```
  SITE NAME:
  OFFICE A
         NO:
 1234567890
SUB ADDRESS:[**********]

   0123456789 BS



           <CANCEL> <OK>
```

7 Enter the subaddress using ⬅ or ➡, then press ENTER one by one.
The selected numbers are entered in the subaddress box.
- Subaddress can be up to 10 digits.
- An asterisk is displayed where nothing is entered.

8 Move the cursor to <OK> using ⬇, then press ENTER.
The following screen appears.



```
  SITE NAME:
  OFFICE A
         NO:
 1234567890
SUB ADDRESS:001

SELECT:1B 2B SINGLE DUAL



           <CANCEL> <OK>
```

(Continued)

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9 Select the transmission rate (via an ISDN line from 1B or 2B, via the V.35 interface from SINGLE or DUAL) using ← or →, then press ENTER.
The setting is registered and the LIST (NORMAL) menu appears.

To correct the characters

Move the cursor to BS (backspace) and press ENTER. The last character is erased.

To cancel the registration

Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

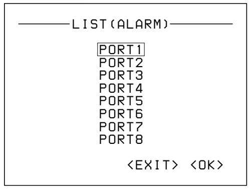
Registering Called Parties When an Alarm Signal Is Input

You can register up to 20 called parties for one port number of the ALARM IN port when an alarm signal is input. If an alarm signal is input, the unit calls these parties automatically.

Select SETTING from the main menu to display the SETTING menu.

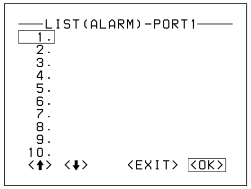
Registering Your Called Party Information

1 Select 6. LIST (ALARM) from the SETTING menu.
The LIST (ALARM) menu appears.



```
LIST(ALARM)

PORT1
PORT2
PORT3
PORT4
PORT5
PORT6
PORT7
PORT8

<EXIT> <OK>
```

2 Select the port number (PORT 1 – 8) using ↑ or ↓, then press ENTER.
The following screen appears.

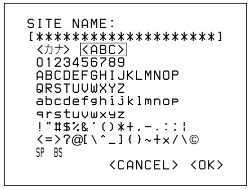


```
LIST(ALARM)-PORT1
 1.
 2.
 3.
 4.
 5.
 6.
 7.
 8.
 9.
10.
<↑> <↓>     <EXIT> <OK>
```

To move from page to page on the LIST (ALARM) menu
Move the cursor to <↓> using ←. Each time you press ENTER, the next LIST (ALARM) menu is displayed.
Move the cursor to <↑> using ←. Each time you press ENTER, the previous LIST (ALARM) menu is displayed.

(Continued)

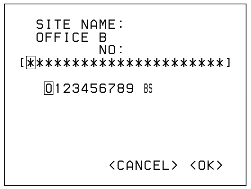
3 Select the list number (1 – 20) to register the called party using ↑ or ↓, then press ENTER.
The following screen appears.



```
 SITE NAME:
 [********************]
  <カナ> <ABC>
  0123456789
  ABCDEFGHIJKLMNOP
  QRSTUVWXYZ
  abcdefghijklmnop
  qrstuvwxyz
  !”#$%&’()*+,-.:;¦
  <=>?@[\^_]{}~+x/\©
  SP BS
           <CANCEL> <OK>
```

4 Press ↓ and select the site name using ← or →, then press ENTER character by character.
The selected characters are entered in the site name box.
- A site name can be up to 20 characters long.
- Select SP for a space.
- An asterisk is displayed where nothing is entered.

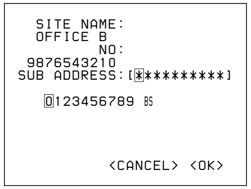
5 Move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
   SITE NAME:
   OFFICE B
          NO:
 [**********************]

    0123456789 BS



          <CANCEL> <OK>
```

6 Enter the telephone number using ← or →, then press ENTER one by one.
The selected numbers are entered in the telephone number box.
- A telephone number can be up to 22 digits.
- An asterisk is displayed where nothing is entered.

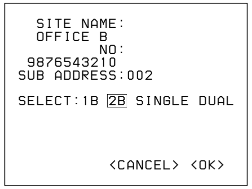
7 Move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
   SITE NAME:
   OFFICE B
          NO:
  9876543210
 SUB ADDRESS:[**********]

    0123456789 BS



          <CANCEL> <OK>
```

8 Enter the subaddress using ← or →, then press ENTER.
The selected numbers are entered in the subaddress box.
- A telephone number can be up to 10 digits.
- An asterisk is displayed where nothing is entered.

9 Move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
   SITE NAME:
   OFFICE B
          NO:
  9876543210
 SUB ADDRESS:002

 SELECT:1B 2B SINGLE DUAL



          <CANCEL> <OK>
```

10 Select the transmission rate (via an ISDN line from 1B or 2B, via the V.35 interface from SINGLE or DUAL) using ← or →, then press ENTER.
The setting is registered and the LIST (ALARM) menu appears.

To correct the characters

Move the cursor to BS (backspace) and press ENTER. The last character is erased.

To cancel the registration

Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

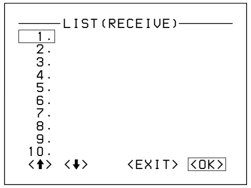
Registering Calling Parties with Permission to Be Connected

You can register up to 128 calling parties with permission to be connected.

Select SETTING from the main menu to display the SETTING menu.

Registering Your Calling Party Information

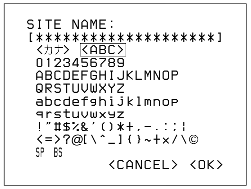
1 Select 7. LIST (RECEIVE) from the SETTING menu.
The LIST (RECEIVE) menu appears.



```
————LIST(RECEIVE)————
 1.
 2.
 3.
 4.
 5.
 6.
 7.
 8.
 9.
10.
<↑> <↓>     <EXIT> <OK>
```

To move from page to page on the LIST (RECEIVE) menu
Move the cursor to <↓> using ←. Each time you press ENTER, the next LIST (RECEIVE) menu is displayed.
Move the cursor to <↑> using ←. Each time you press ENTER, the previous LIST (RECEIVE) menu is displayed.

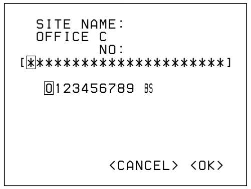
2 Select the list number to register the calling party using ↑ or ↓, then press ENTER.
The following screen appears.



```
SITE NAME:
[********************]
 <カナ> <ABC>
 0123456789
 ABCDEFGHIJKLMNOP
 QRSTUVWXYZ
 abcdefghijklmnop
 qrstuvwxyz
 !"#$%&'()*+,-.:;¦
 <=>?@[\^_]{}~+x/\©
 SP BS
          <CANCEL> <OK>
```

3 Press ↓ and select the site name using ← or →, then press ENTER character by character.
The selected characters are entered in the site name box.
- The site name can be up to 20 characters long.
- Select SP for spaces.
- An asterisk is displayed where nothing is entered.

4 Move the cursor to <OK> using ↓, then press ENTER.
The following screen appears.



```
  SITE NAME:
  OFFICE C
       NO:
[**********************]

   0123456789 BS

          <CANCEL> <OK>
```

5 Enter the telephone number using ← or →, then press ENTER one by one.
The selected numbers are entered in the telephone number box.
- A telephone number can be up to 22 digits.
- An asterisk is displayed where nothing is entered.

6 Move the cursor to <OK> using ↓, then press ENTER.
The setting is registered and the LIST (RECEIVE) menu appears.

To correct the characters

Move the cursor to BS (backspace) and press ENTER. The last character is erased.

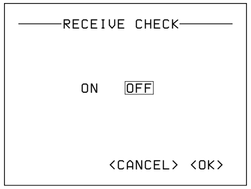
To cancel the registration

Move the cursor to <CANCEL> and press ENTER. The registration is canceled and the SETTING menu appears.

Checking the Calling Party Number

You can check a call against the numbers registered on the LIST (RECEIVE) menu. If you set RECEIVE CHECK to ON, the unit cannot receive any calls other than from the registered numbers.

1 Select 30. RECEIVE CHECK from the SETTING menu.
The following menu appears.



```
————RECEIVE CHECK————


     ON   OFF



         <CANCEL> <OK>
```

2 Select ON or OFF using ← or →, then press ↓.

3 Press ENTER.
The setting is registered and the main menu appears.

To cancel the operation

Move the cursor to <CANCEL> and press ENTER. The setting operation is canceled and the SETTING menu appears.

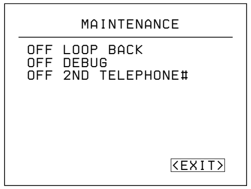
Diagnosing the System

You can diagnose the Monitoring Codec system. The diagnostics are executed by looping back the audio/video signals and serial data.

Select SETTING from the main menu to display the SETTING menu.

Setting the Loop Back and Debugging

1 Select 29. MAINTENANCE from the SETTING menu.
The following screen appears.



MAINTENANCE

OFF LOOP BACK
OFF DEBUG
OFF 2ND TELEPHONE#

<EXIT>

2 Select loop back ON or OFF using ← or →, then press ↓.

3 Select debugging ON or OFF using ← or →, then press ↓ twice.

4 Press ENTER.
The setting is registered.

When LOOP BACK is set to ON
The analog video input signal from the camera is digitized and encorded. This signal is looped back and decoded before sending it via ISDN. This decoded signal is displayed on the monitor after converting to an analog signal.

When DEBUG is set to ON
The ISDN line connection status is output to the USER DATA port.

To execute diagnostics

Set LOOP BACK to ON and dial from the DIAL LIST or the DIAL KEY menu. (You don't need to enter the telephone number.)
Loop back is normal if the video signal which does not to through the Monitoring Codec is displayed in a few seconds, then the video signal going through the Monitoring Codec is displayed.

To monitor the ISDN status

Set DEBUG to ON and connect the dumb terminal to the USER DATA port.
The status in the form of (n, m) is displayed on the monitor. "n" is the status of the 1B-channel and "m" is the status of the 2B-channel. Status is displayed on the monitor from 0 to 10. "10" is the status of the connection.

To cancel diagnostics

Set LOOP BACK and DEBUG to OFF. Move the cursor to <EXIT> and press ENTER. Diagnostics are canceled and the main menu appears.

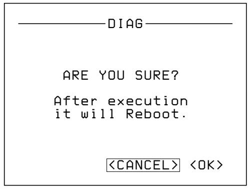
Diagnosing the Hardware

Note
After executing diagnostics, all settings are reset to the same state as when the power is turned on except for the items in the SETTING menu.

Audio and video signals diagnostics

Notes
- For a video signal loop back, you need a camera and a monitor.
- For an audio signal loop back, you need a headset.

1 Select 31. DIAG from the SETTING menu.
The following screen appears.



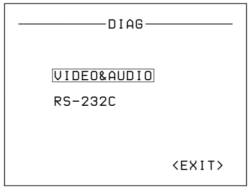
DIAG

ARE YOU SURE?

After execution
it will Reboot.

<CANCEL> <OK>

2 Select <OK> using →, then press ENTER.
The following screen appears.



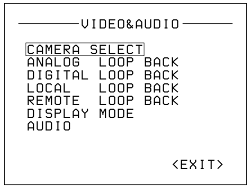
DIAG

VIDEO&AUDIO
RS-232C

<EXIT>

(Continued)

3 Select VIDEO & AUDIO, then press ENTER.
The following screen appears.



4 Select an item to diagnose using ↑ or ↓, then press ENTER.
The hardware self-diagnostic starts.

Note

After executing the LOCAL LOOP BACK diagnostic, the DIGITAL LOOP BACK diagnostic cannot be executed.

Items checked when the Monitoring Codec is off-line

Item	Normal result
CAMERA SELECT	Changes the input signal and displays it on the monitor to diagnose the video signal I/O and the video switch. You can connect the monitor to either the VIDEO OUT connector or MONITOR OUT connector. Selected camera picture is displayed. If you select a port into which no video signal is input, there is no synchronization and nothing is displayed on the monitor.
ANALOG LOOP BACK	Displays the analog video signals on the monitor.
DIGITAL LOOP BACK	Displays the video signals which are converted to digital and then converted to analog again (compared to the analog signals, they are rough.)
LOCAL LOOP BACK	Displays the video signals which are encoded and decoded (compared to the digital signals, they appear frame by frame.)
DISPLAY MODE	Displays only character information or only input video signals. Each time you press ENTER, the screen changes between character information without picture and superimposed picture.
AUDIO	Outputs the audio signals input from the microphone to the headset or the line output.

Item checked when the Monitoring Codec is on-line

Item	Normal result
REMOTE LOOP BACK	Displays the same status as LOCAL LOOP BACK above. REMOTE LOOP BACK is executed when it is on-line. After executing REMOTE LOOP BACK, the line is disconnected automatically and the unit returns to the same state as when the power is turned on.

To cancel the diagnostics

Move the cursor to <EXIT> and press ENTER. The data except for the SETTING menu are reset to the same state as when the power is turned on.

Serial data diagnostics

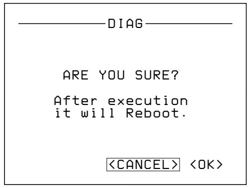
To check serial data, connect the loop back connector to the COMPUTER port, TABLET port and USER DATA port and diagnose by looping back the data sent from the Monitoring Codec.
If you connect a loop back connector to a remote site when it is on-line, you can check the remote site during data transmission. If you connect a loop back connector to the local site when it is off-line, you can check the local site.

Notes

- To loop back serial data, you need a shorted loop back connector for pins 2 and 3, pins 4 and 6, and pins 7 and 8.
- A serial data loop back is done in RS-232C mode.

For details on pin assignment, see "Pin Assignment" on pages A-10 (E) to A-13 (E).

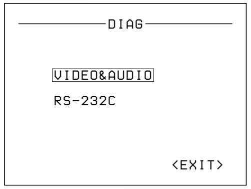
1 Select 31. DIAG from the SETTING menu.
The following screen appears.



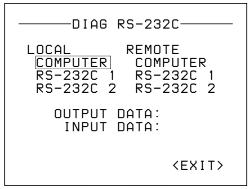
ARE YOU SURE?

After execution
it will Reboot.

2 Select <OK> using →, then press ENTER.
The following screen appears.



3 Select RS-232C using ↓, then press ENTER.
The following screen appears.



Diagnosing the System

4 Select an item to check using ←, ↑, → or ↓ then press ENTER.
The system starts diagnostics.
When the hardware is functioning correctly, the system displays OK.

To cancel the diagnostics
Move the cursor to <EXIT> and press ENTER. The data except for the SETTING menu are reset to the same state as when the power is turned on.

Starting Communication

To connect to a remote site, dial the telephone number as you would call a normal telephone.
The Monitoring Codec can send and receive voice, pictures and control data via one ISDN (BRI) line.

Connecting to a Remote Site

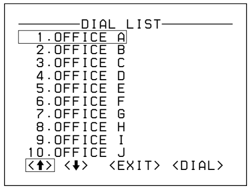
You can connect to a remote site in the following two ways. The connection method is different depending on whether a remote site has been registered or not.
If you connect to the site whose B1-channel and B2-channel have a different telephone number, you have to set the second telephone number. For details, see page 3-4 (E).

To connect to a registered remote site

You have to register a called party in the SETTING menu before the communication.
For details, see "Registering Called Parties" on page 2-30 (E).

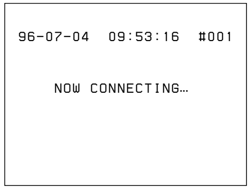
If the DIAL LIST menu is displayed, start from Step **2**.

1 Select the DIAL LIST from the main menu.
The DIAL LIST menu appears.



```
———————DIAL LIST————————
  1.OFFICE A
  2.OFFICE B
  3.OFFICE C
  4.OFFICE D
  5.OFFICE E
  6.OFFICE F
  7.OFFICE G
  8.OFFICE H
  9.OFFICE I
 10.OFFICE J
 <↑> <↓>  <EXIT> <DIAL>
```

2 Select the remote site to connect using ↑ or ↓, then press ENTER.
The following screen appears and the system starts the connection process.



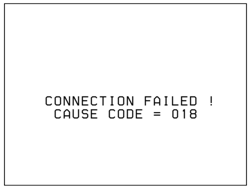
```
96-07-04  09:53:16  #001

    NOW CONNECTING…
```

When the remote site is connected, the picture from the remote site is displayed.

To cancel the connection before connecting to a remote site
Press ←.
If you are using the Remote Commander (not supplied), press ◀.
If you are using the tablet (WACOM Art Pad II for Windows, not supplied), select CANCEL on the tablet.

To move from page to page on the DIAL LIST menu
Move the cursor to <↓> using ← or →, then press ENTER. Each time you press ENTER, the next DIAL LIST menu is displayed.
Move the cursor to <↑> using ← or →, then press ENTER. Each time you press ENTER, the previous DIAL LIST menu is displayed.

If the connection failed
If the system cannot make a connection with the remote site, the following message and the ISDN cause code appear for five seconds and the DIAL LIST menu appears again.



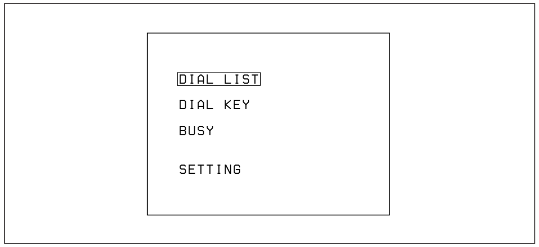
```
CONNECTION FAILED !
 CAUSE CODE = 018
```

For details on the ISDN cause code, see "ISDN cause codes" on page A-8 (E).

To return to the main menu
Move the cursor to <EXIT> and press ENTER. The main menu appears.

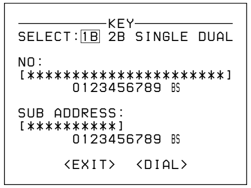
To connect to an unregistered remote site

If the DIAL LIST menu is displayed, select <EXIT> to display the main menu.
If you have disabled the main menu, the following screen is displayed when you select <EXIT>. Proceed with the process from this screen.



```
DIAL LIST
DIAL KEY
BUSY

SETTING
```

1 Select DIAL KEY.
The following screen appears.



```
─────────KEY──────────
SELECT:1B 2B SINGLE DUAL

NO:
[**********************]
      0123456789 BS

SUB ADDRESS:
[**********]
      0123456789 BS

     <EXIT>  <DIAL>
```

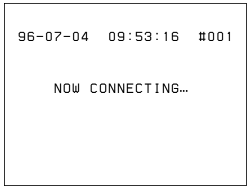
2 Select the transmission rate (via an ISDN line from 1B or 2B, via the V.35 interface from SINGLE or DUAL) using ← or →, then press ↓.

3 Select the telephone number of the remote site using ← or →, then press ENTER one by one.
The telephone number is entered in the telephone number box.
- An asterisk is displayed where nothing is entered.

4 After entering the telephone number, move the cursor to <OK> using ↓, then press ENTER.

5 Select the subaddress of the remote site using ← or →, then press ENTER one by one.
The subaddress is entered in the subaddress box.
- An asterisk is displayed where nothing is entered.

6 After entering the subaddress, move the cursor to <DIAL> using ↓, then press ENTER.
The following screen appears and the system starts the connection process.

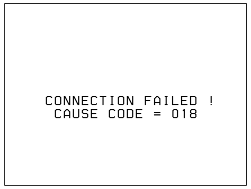


```
96-07-04  09:53:16  #001


    NOW CONNECTING…
```

When the remote site is connected, the picture from the remote site is displayed.

To cancel the connection before connecting to a remote site
Press ←.
If you are using the Remote Commander (not supplied), press ◀.
If you are using the tablet (WACOM Art Pad II for Windows, not supplied), select CANCEL on the tablet.

If the connection failed
If the system cannot connect with the remote site, the following message and the ISDN cause code appear for five seconds and the DIAL LIST menu appears again.



```
CONNECTION FAILED !
 CAUSE CODE = 018
```

For details on the ISDN cause code, see “ISDN cause codes” on page A-8 (E).

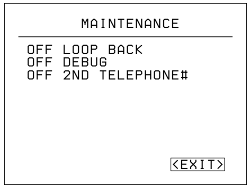
To return to the main menu
Move the cursor to <EXIT> and press ENTER. The main menu appears.

To correct the characters
Move the cursor to BS (backspace) and press ENTER. The last character is erased.

If you connect to the site whose B1-channel and B2-channel have a different telephone number

Before dialing to these sites, set the second telephone number as follows.

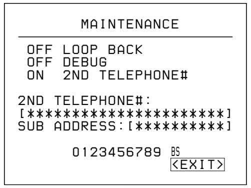
1 Select 29. MAINTENANCE from the SETTING menu.
The following screen appears.



```
         MAINTENANCE
 OFF LOOP BACK
 OFF DEBUG
 OFF 2ND TELEPHONE#

                      <EXIT>
```

2 Press ↓ twice.

3 Set 2ND TELEPHONE# to ON using ← or →, then press ENTER.
The following screen appears.



```
         MAINTENANCE
 OFF LOOP BACK
 OFF DEBUG
 ON  2ND TELEPHONE#

2ND TELEPHONE#:
[************************]
SUB ADDRESS:[***********]

       0123456789 BS
                      <EXIT>
```

4 Select the second telephone number of the remote site using ← or →, then press ENTER one by one.
The second telephone number is entered in the second telephone number box.
- An asterisk is displayed where nothing is entered.

5 After entering the second telephone number, move the cursor to <OK> using ↓, then press ENTER.

6 Select the second subaddress of the remote site using ← or →, then press ENTER one by one.
The second subaddress is entered in the second subaddress box.
- An asterisk is displayed where nothing is entered.

7 After entering the subaddress, move the cursor to <EXIT> using ↓, then press ENTER.
The setting is registerd and the SETTING menu appears.

8 When you connnect to a registered site, follow the steps on pages 3-1 (E).
When you connnect to a unregistered site, follow the steps on pages 3-2 (E) and 3-3 (E).

Making the Line Busy Temporarily

You can temporarily disable the line so that when a remote site calls, the system does not accept the call.

Select LOCAL BUSY from the main menu.
The following screen appears and the line is disabled.

```
NOW BUSY…
```

To enable the line
Press any key on the Monitoring Codec.
If you are using the Remote Commander (not supplied), press any key on the Remote Commander.
If you are using the tablet (WACOM Art Pad II for Windows, not supplied), select ENTER on the tablet.

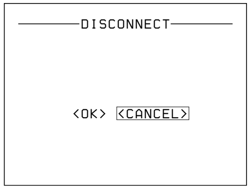
The initial setting screen appears and soon the DIAL LIST menu appears.

Note
The settings except for the items in the SETTING menu are reset to the original setting.

Ending Communication

Disconnecting the Line

1 Select DIAL DISC from the main menu.
The following screen appears.


DISCONNECT
<OK> <CANCEL>

2 Select <OK> using ➡, then press ENTER.
The line disconnects.

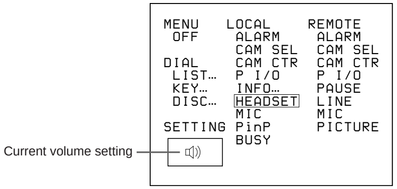
To cancel the operation
Move the cursor to <CANCEL> and press ENTER. The operation is canceled and the main menu appears.

Changing the Audio Level and Microphone Input Level

You can change the headset volume and the microphone input level out of two settings or mute the sound.

Changing the Headset and Line Volume of the Local Site

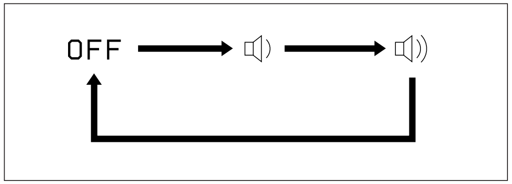
1 Select LOCAL HEADSET from the main menu.
The current volume setting is displayed in the lower-left corner of the main menu.


MENU
OFF
DIAL
LIST…
KEY…
DISC…
SETTING
LOCAL
ALARM
CAM SEL
CAM CTR
P I/O
INFO…
HEADSET
MIC
PinP
BUSY
REMOTE
ALARM
CAM SEL
CAM CTR
P I/O
PAUSE
LINE
MIC
PICTURE
Current volume setting

Setting	Meaning
🔊	The volume is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
🔉	The volume is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF	Sound is muted.

For details on 12. AUDIO MIC LEVEL, see “Adjusting Line (Headset) Audio Level and Microphone Input Level” on page 2-14 (E).

2 Press ENTER.
Each time you press ENTER, the volume setting is changed as follows.

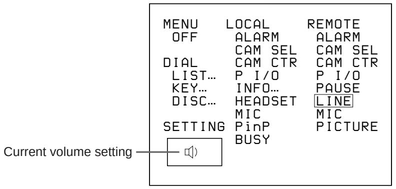


Notes

- The headset sound is monaural.
- If you set AUDIO to OFF in the 12. AUDIO MIC LEVEL setting, no sound is output depending on whether you select 🔊 or 🔉.

Changing the Headset and Line Volume of the Remote Site

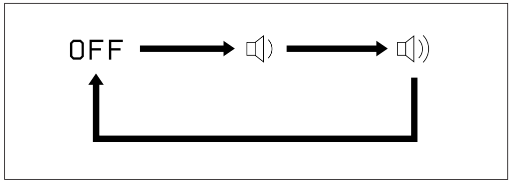
1 Select REMOTE LINE from the main menu.
The current volume setting is displayed in the lower-left corner of the main menu.


MENU
OFF
DIAL
LIST…
KEY…
DISC…
SETTING
LOCAL
ALARM
CAM SEL
CAM CTR
P I/O
INFO…
HEADSET
MIC
PinP
BUSY
REMOTE
ALARM
CAM SEL
CAM CTR
P I/O
PAUSE
LINE
MIC
PICTURE
Current volume setting

Setting	Meaning
🔊	The volume is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
🔉	The volume is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF	Sound is muted.

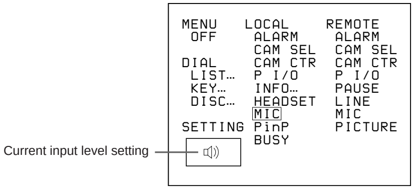
For details on 12. AUDIO MIC LEVEL, see “Adjusting Line (Headset) Audio Level and Microphone Input Level” on page 2-14 (E).

2 Press ENTER.
Each time you press ENTER, the volume setting is changed as follows.



Changing the Input Level of the Microphone of the Local Site

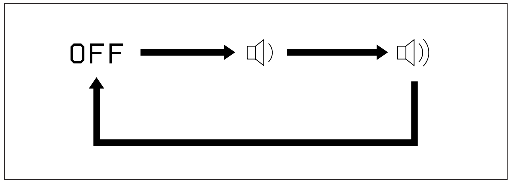
1 Select LOCAL MIC from the main menu.
The current input level setting is displayed in the lower-left corner of the main menu.


MENU
OFF
DIAL
LIST…
KEY…
DISC…
SETTING
LOCAL
ALARM
CAM SEL
CAM CTR
P I/O
INFO…
HEADSET
MIC
PinP
BUSY
REMOTE
ALARM
CAM SEL
CAM CTR
P I/O
PAUSE
LINE
MIC
PICTURE
Current input level setting

Setting	Meaning
🔊	The input level is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
🔉	The input level is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF	No sound is input.

For details on 12. AUDIO MIC LEVEL, see “Adjusting Line (Headset) Audio Level and Microphone Input Level” on page 2-14 (E).

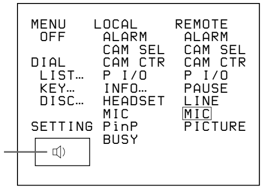
2 Press ENTER.
Each time you press ENTER, the input level setting is changed as follows.



Changing the Audio Level and Microphone Input Level

Changing the Input Level of the Microphone of the Remote Site

1 Select REMOTE MIC from the main menu.
The current input level setting is displayed in the lower-left corner of the main menu.



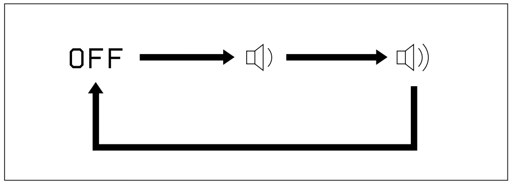
```
MENU   LOCAL     REMOTE
 OFF     ALARM     ALARM
         CAM SEL   CAM SEL
DIAL     CAM CTR   CAM CTR
 LIST…   P I/O     P I/O
 KEY…    INFO…     PAUSE
 DISC…   HEADSET   LINE
         MIC       MIC
SETTING  PinP      PICTURE
         BUSY
```

Current input level setting

Setting	Meaning
🔊	The input level is set to the HIGH position level set in 12. AUDIO MIC LEVEL.
🔉	The input level is set to the LOW position level set in 12. AUDIO MIC LEVEL.
OFF	No sound is input.

For details on 12. AUDIO MIC LEVEL, see “Adjusting Line (Headset) Audio Level and Microphone Input Level” on page 2-14 (E).

2 Press ENTER.
Each time you press ENTER, the input level setting is changed as follows.

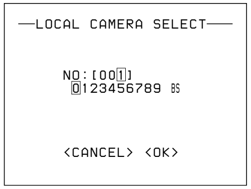


Selecting the Picture

You can select which pictures are displayed from the cameras connected to the VIDEO IN (1 – 8) connectors or EXT VIDEO IN (9 – 256) connectors. You can select the picture from either the local site or the remote site.

Switching the Pictures

1 To select a picture at the local site, select LOCAL CAM SEL from the main menu.
To select a picture at a remote site, select REMOTE CAM SEL.
The following screen appears. (The illustration below is for selecting LOCAL CAM SEL.)



```
——LOCAL CAMERA SELECT——

   NO:[001]
    0123456789 BS


   <CANCEL> <OK>
```

2 Select the camera number you want to display on the monitor using ← or →, then press ENTER one by one.
The selected camera number is entered in the number box.

3 Move the cursor to <OK> using ↓, then press ENTER.
The picture of the selected camera is displayed.

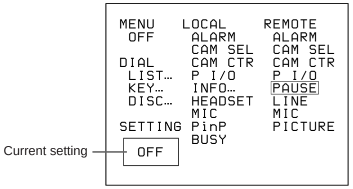
To correct the numbers
Move the cursor to BS (backspace) and press ENTER. The last character is erased.

Note
You cannot select a number greater than the total camera number set in the 8. CAMERA setting.

Stopping the Camera Auto Scan Temporarily

You can stop the camera auto scan temporarily.
For details on the camera auto scan, see "Switching Pictures Automatically" on page 2-28 (E).

1 Select REMOTE PAUSE from the main menu.
The current setting is displayed in the lower-left corner of the main menu.



```
MENU   LOCAL    REMOTE
 OFF    ALARM    ALARM
        CAM SEL  CAM SEL
DIAL    CAM CTR  CAM CTR
 LIST…  P I/O    P I/O
 KEY…   INFO…    PAUSE
 DISC…  HEADSET  LINE
        MIC      MIC
SETTING PinP     PICTURE
        BUSY
 OFF
```

2 Press ENTER.
Each time you press ENTER, the setting is changed between ON and OFF.
ON: Disable camera auto scan.
OFF: Enable camera auto scan.

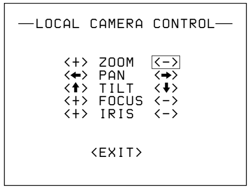
Adjusting the Picture

You can adjust a picture (zoom, pan, tilt, focus and iris) or change the picture quality.

Operating the Camera

You can operate the camera with the camera controller.

1 To operate a camera at the local site, select LOCAL CAM CTR from the main menu.
To operate a camera at a remote site, select REMOTE CAM CTR from the main menu.
The following screen appears. (The illustration below is for selecting LOCAL CAM CTR.)



```
——LOCAL CAMERA CONTROL——

     <+> ZOOM  <->
     <←> PAN   <→>
     <↑> TILT  <↓>
     <+> FOCUS <->
     <+> IRIS  <->


        <EXIT>
```

2 Select an item to set using ←, ↑, →, or ↓. Press ENTER repeatedly to adjust the item.
The picture on the monitor is adjusted.

3 Move the cursor to <EXIT> using ↓, then press ENTER.
The main menu appears.

To adjust the zoom
Select <+> or <–> next to ZOOM.

To adjust the angle
Select <←> or <→> next to PAN or select <↑> or <↓> next to TILT for the desired angle.

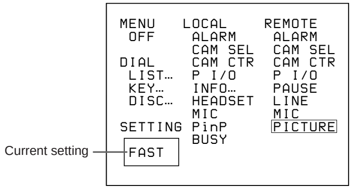
To adjust the focus
Select <+> or <–> next to FOCUS.

To adjust the iris
Select <+> or <–> next to IRIS.

Changing the Quality of the Picture Sent from a Remote Site

You can change the quality of the picture sent from a remote site.

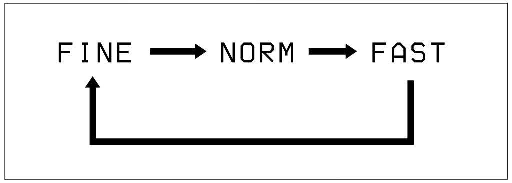
1 Select REMOTE PICTURE from the main menu.
The current picture quality setting is displayed in the lower-left corner of the main menu.



```
MENU   LOCAL    REMOTE
 OFF     ALARM    ALARM
         CAM SEL  CAM SEL
DIAL     CAM CTR  CAM CTR
 LIST…   P I/O    P I/O
 KEY…    INFO…    PAUSE
 DISC…   HEADSET  LINE
         MIC      MIC
SETTING  PinP     PICTURE
         BUSY
 FAST
```

Setting	Meaning
FINE	Gives picture quality preference than picture motion.
NORM	Middle setting between FINE and FAST.
FAST	Gives picture motion preference than picture quality.

2 Press ENTER.
Each time you press ENTER, the picture quality setting is changed as follows.



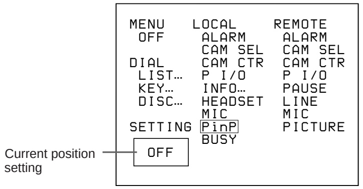
Changing the Screen Setting

You can display an inset window or character information on the monitor.

Changing the Position of the Inset Window (Picture-in-Picture)

Normally, the monitor displays the picture sent from a remote site. You can display the picture sent from the local site to a remote site in an inset window.

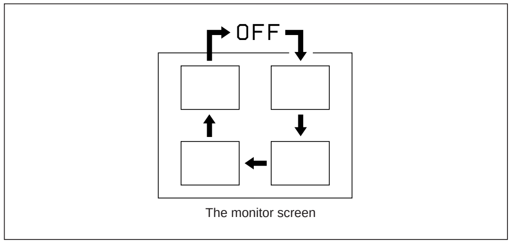
1 Select LOCAL PinP from the main menu.
The current position setting is displayed in the lower-left corner of the main menu.



```
MENU   LOCAL    REMOTE
 OFF     ALARM    ALARM
         CAM SEL  CAM SEL
DIAL     CAM CTR  CAM CTR
 LIST…   P I/O    P I/O
 KEY…    INFO…    PAUSE
 DISC…   HEADSET  LINE
         MIC      MIC
SETTING  PinP     PICTURE
         BUSY
 OFF
```

Setting	Meaning
◳	The inset window is displayed in the upper-right corner.
◲	The inset window is displayed in the lower-right corner.
◱	The inset window is displayed in the lower-left corner.
◰	The inset window is displayed in the upper-left corner.
OFF	The inset window is not displayed.

2 Press ENTER.
Each time you press ENTER, the inset window setting is changed as follows.



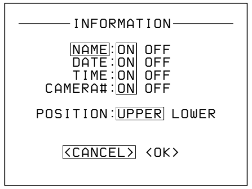
Note

The local site picture displayed in the inset window is a mirrored image.

Selecting the Information to Display on the Monitor

You can superimpose the following information on the on-line monitor.

1 Select LOCAL INFO from the main menu.
The following screen appears.



2 Select ON or OFF using ←, ↑, → or ↓, then press ↓.
The cursor moves down to the next line.

3 After setting all items, move the cursor to <OK> using ↓.

4 Press ENTER.
The information display is set and the main menu appears.

To display the site name
Select ON next to NAME.

To display the date
Select ON next to DATE.

To display the time
Select ON next to TIME.

To display a camera number
Select ON next to CAMERA #.

To select the position to display the information
Select UPPER or LOWER next to POSITION.

To cancel the operation
Move the cursor to <CANCEL> and press ENTER. The operation is canceled and the main menu appears.

Setting Ports

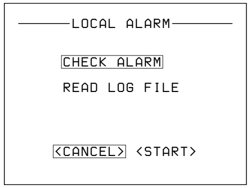
You can check alarm signals and log files in list view. You can also set the bit value of the RELAY OUT port.

Checking the Alarm Signals and Log File of the ALARM IN Port

The following describes how to check the ALARM IN port status.

To check the alarm signal list

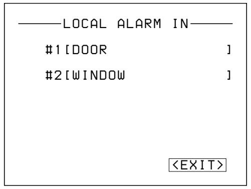
1 To check the local site's alarm signal to the ALARM IN port, select LOCAL ALARM from the main menu.
To check the remote site's alarm signal to the ALARM IN port, select REMOTE ALARM from the main menu.
The following screen appears. (The illustration below is for selecting LOCAL ALARM.)



2 Move the cursor to <START> using →, then press ENTER.
The system starts to check the ALARM IN port.

NOW CHECKING ALARM…

If an alarm has generated, the alarm signal list is displayed.



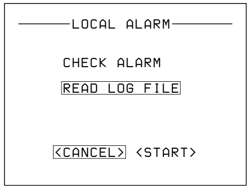
To move from page to page on the ALARM IN list
Move the cursor to <↓> using ← or →, then press ENTER. Each time you press ENTER, the next alarm signal list is displayed.
Move the cursor to <↑> using ← or →, then press ENTER. Each time you press ENTER, the previous alarm signal list is displayed.

To return to the main menu
Move the cursor to <EXIT> and press ENTER. The main menu appears.

To check the ALARM IN port log file list

You can check the log file list on the ALARM IN port.
Up to 128 log data items are stored in the list. If the list is full, the oldest log is deleted when a new one is entered.

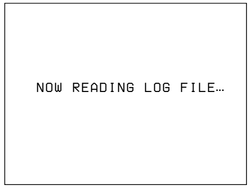
1 To check the local site's log file list on the ALARM IN port, select LOCAL ALARM from the main menu.
To check the remote site's log file list on the ALARM IN port, select REMOTE ALARM from the main menu.
The following screen appears. (The illustration below is for selecting LOCAL ALARM.)



```
───────LOCAL ALARM───────

      CHECK ALARM
      READ LOG FILE



     <CANCEL> <START>
```

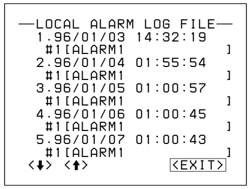
2 Move the cursor to READ LOG FILE using ↓, then press ENTER.

3 Move the cursor to <START> using →, then press ENTER.
The log file is read.



```
NOW READING LOG FILE…
```

The log file list is displayed.



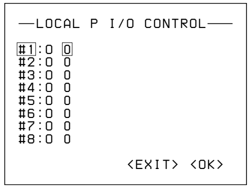
```
──LOCAL ALARM LOG FILE──
  1.96/01/03 14:32:19
   #1[ALARM1            ]
  2.96/01/04 01:55:54
   #1[ALARM1            ]
  3.96/01/05 01:00:57
   #1[ALARM1            ]
  4.96/01/06 01:00:45
   #1[ALARM1            ]
  5.96/01/07 01:00:43
   #1[ALARM1            ]
 <↓> <↑>          <EXIT>
```

To move from page to page on the ALARM LOG FILE list
Move the cursor to <↓> using ← or →, then press ENTER. Each time you press ENTER, the next alarm log file list is displayed.
Move the cursor to <↑> using ← or →, then press ENTER. Each time you press ENTER, the previous alarm log file list is displayed.

To return to the main menu
Move the cursor to <EXIT> and press ENTER. The main menu appears.

Setting the Bit Value of the RELAY OUT Port

1 To set the bit value of the local site's RELAY OUT port, select LOCAL P I/O from the main menu.
To set the bit value of the remote site's RELAY OUT port, select REMOTE P I/O from the main menu.
The following screen appears. (The illustration below is for selecting LOCAL P I/O.)



```
──LOCAL P I/O CONTROL──

#1:0 0
#2:0 0
#3:0 0
#4:0 0
#5:0 0
#6:0 0
#7:0 0
#8:0 0

               <EXIT> <OK>
```

(Continued)

2 Select the port number using ↑ or ↓.

3 Move the cursor to the bit column using ← or →, then press ENTER.
Each time you press ENTER, the bit setting is changed cyclically between 0 and 1.

4 After setting the bit value, move the cursor to <EXIT> using ↓, then press ENTER.
The setting is registered and the main menu appears.

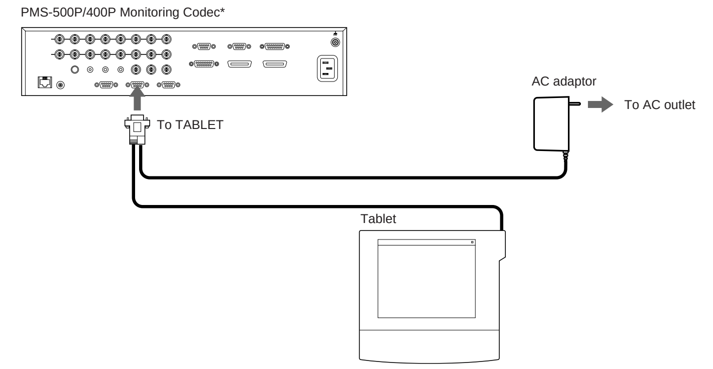
Note

You cannot change the setting of the RELAY OUT port which has been set to IN (That is set in 22.PARALLEL I/O in the SETTING menu.)
For details on 22.PARALLEL I/O, see "Setting Up the RELAY OUT port" on page 2-22 (E).

Preparing the Tablet

You can operate the menus from the tablet (WACOM, Art Pad II for Windows, not supplied).

Connecting the Tablet



* The illustration is PMS-500P.

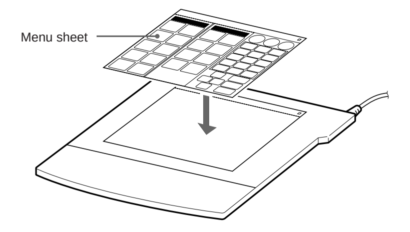
Connecting the tablet

Note

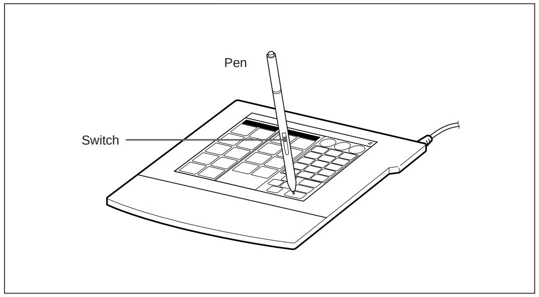
The tablet does not function if it is connected when the Monitoring Codec power is turned on. Connect the tablet and first turn on the tablet power before turning on the power of the Monitoring Codec.

Pasting the Menu Sheet on the Tablet

Peel off the seal from the supplied menu sheet and paste it on the tablet.



Operating Menus From the Tablet



Using the Tablet

To select an item and setting

Press the tablet icon with the pen or press the pen switch when the item or setting becomes highlighted.
For details on tablet operation, see the Operating Instructions of the Tablet.

Notes

- If you are not using the pen, place it in the pen stand.
- Do not use the keys on the main unit, the tablet and the Remote Commander at the same time. If you use them simultaneously, the Monitoring Codec may not function properly.

Tablet Icons

The menu operations are the same as the operations from the main unit. For details, see the appropriate page for a particular operation.

Icons on the right side of the menu sheet

☎	Disconnects the line (Hung-up.) *For details, see “ Disconnecting the Line” on page 3-6 (E).*
123 ☎	Connects to a remote site that is not registered (Dial.) *For details, see “To connect to an unregistered remote site” on page 3-2 (E).*
☎	Connects to a registered remote site. *For details, see “To connect to a registered remote site” on page 3-1 (E).*
1 2 3 4 5 6 7 8 9 ✱ 0 #	Enters numbers (e.g., telephone number.) 1 and 3 icons are also used to adjust the zoom. 4 and 6 icons are also used to adjust the focus. 7 and 9 icons are also used to adjust the iris. *For details on camera operation, see “Operating the Camera” on page 3-13 (E).*
BS	Deletes the last character (Back space.)
PAGE − PAGE +	Switches the menu page. PAGE − switches to the previous page. PAGE + switches to the next page.
↑ TILT ← PAN → PAN ↓ TILT	Same as the cursor keys on the Monitoring Codec. These keys also control the camera controller. The camera angle moves in the selected direction. *For details, see “Operating the Camera” on page 3-13 (E).*
OK	Selects <OK> on the monitor screen.
CANCEL	Selects <CANCEL> on the monitor screen.
ENTER	Same as the ENTER key on the Monitoring Codec and enter key on the Remote Commander (not supplied).

Tablet Icons

LOCAL site icons

HEADSET

Each time you select ENTER, the headset or line volume setting of the local site is changed.
For details, see "Changing the Headset and Line Volume of the Local Site" on page 3-7 (E).

MIC

Each time you select ENTER, the microphone input level setting of the local site is changed.
For details, see "Changing the Input Level of the Microphone of the Local Site" on page 3-9 (E).

P in P

Each time you select ENTER, the inset window setting is changed.
For details, see "Changing the Position of the Inset Window (Picture-in-Picture)" on page 3-15 (E).

BUSY

Makes the line busy temporarily.
For details, see "Making the Line Busy Temporarily" on page 3-5 (E).

SETTING

Displays the SETTING menu.
For details, see "Selecting an Item in the SETTING Menu" on page 2-4 (E).

ALARM

Checks the alarm signals and log file of the local ALARM IN port.
For details, see "Checking the Alarm Signals and Log File of the ALARM IN Port" on page 3-17 (E).

CAMERA SELECT

Switches the pictures of the local site.
For details, see "Switching the Pictures" on page 3-11 (E).

CAMERA CONTROL

Operates a local site camera.

1 3	Adjust the zoom.
4 6	Adjust the focus.
7 9	Adjust the iris.
TILT ↑ PAN ← PAN → TILT ↓	Move the camera angle in the selected direction.

P I/O CONTROL

Sets the bit value of the local RELAY OUT port.
For details, see "Setting the Bit Value of the RELAY OUT Port" on the page 3-19 (E).

INFORMATION

Selects the information to display or not.
For details, see "Selecting the Information to Display on the Monitor" on page 3-16 (E).

REMOTE site icons

AUTO SCAN PAUSE

Disables camera auto scan temporarily.
For details, see "Stopping the Camera Auto Scan Temporarily" on page 3-12 (E).

LINE

Each time you select ENTER, the line or headset volume setting is changed.
For details, see "Changing the Headset and Line Volume of the Remote Site" on page 3-8 (E).

MIC

Each time you press ENTER, the microphone input level setting is changed.
For details, see " Changing the Input Level of the Microphone of the Remote Site" on page 3-10 (E).

PICTURE MODE

Each time you select ENTER, the picture quality setting is changed.
For details, see "Changing the Quality of the Picture Sent from the Remote Site" on page 3-14 (E).

ALARM

Checks the alarm signals and log file of the remote ALARM IN port.
For details, see "Checking the Alarm Signals and Log File of the ALARM IN Port" on page 3-17 (E).

CAMERA SELECT

Switches the pictures of the remote site.
For details, see "Switching the Pictures" on page 3-11 (E).

CAMERA CONTROL

Operates a remote site camera.
The operation is the same as the operation described for the CAMERA CONTROL icon of LOCAL position (page 4-4 (E).)
For details, see "Operating the Camera" on page 3-13 (E).

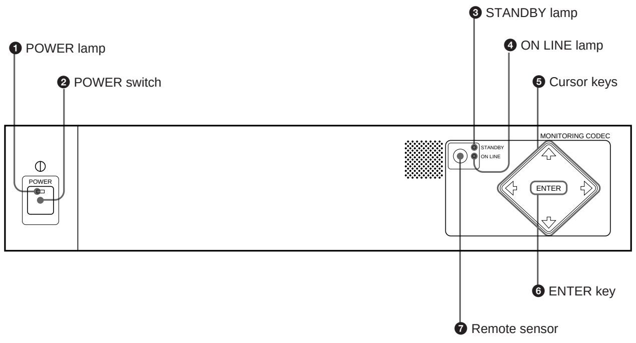
P I/O CONTROL

Sets the bit value of the remote RELAY OUT port.
For details, see "Setting the Bit Value of the RELAY OUT Port" on the page 3-19 (E).

Location and Function of Controls

Monitoring Codec

Front (PMS-500P/400P)


❶ POWER lamp
❷ POWER switch
❸ STANDBY lamp
❹ ON LINE lamp
❺ Cursor keys
❻ ENTER key
❼ Remote sensor
POWER
STANDBY
ON LINE
MONITORING CODEC
ENTER

Front of Monitoring Codec

❶ POWER lamp
Lights up green when the Monitoring Codec is turned on by pressing the POWER switch ❷.

❷ POWER switch
Turns on the Monitoring Codec.

❸ STANDBY lamp
Lights up red when the Monitoring Codec is in the standby mode.

❹ ON LINE lamp
Lights up green when a remote site is connected.

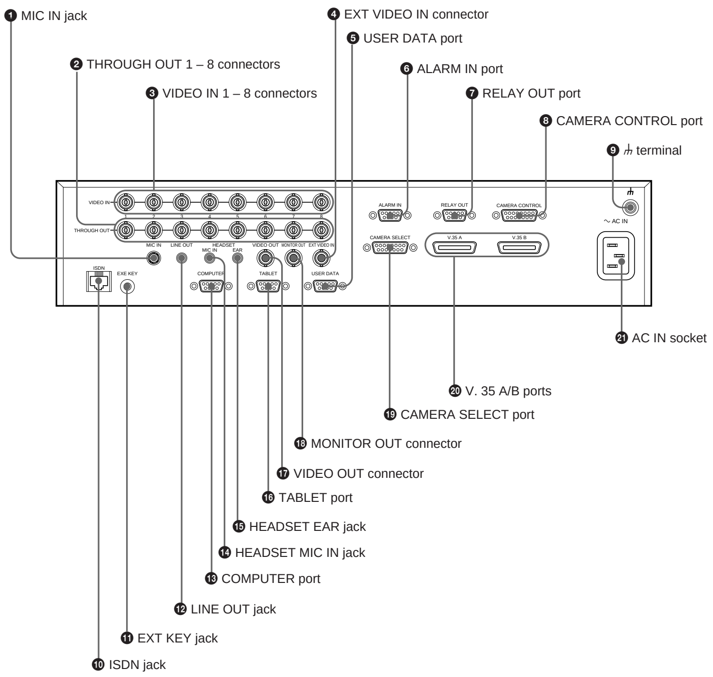
❺ Cursor keys (←, ↑, →, ↓)
Press these keys to move the cursor.

❻ ENTER key
Press this key to confirm the operation.

❼ Remote sensor
Point the Remote Commander (not supplied) at this sensor.

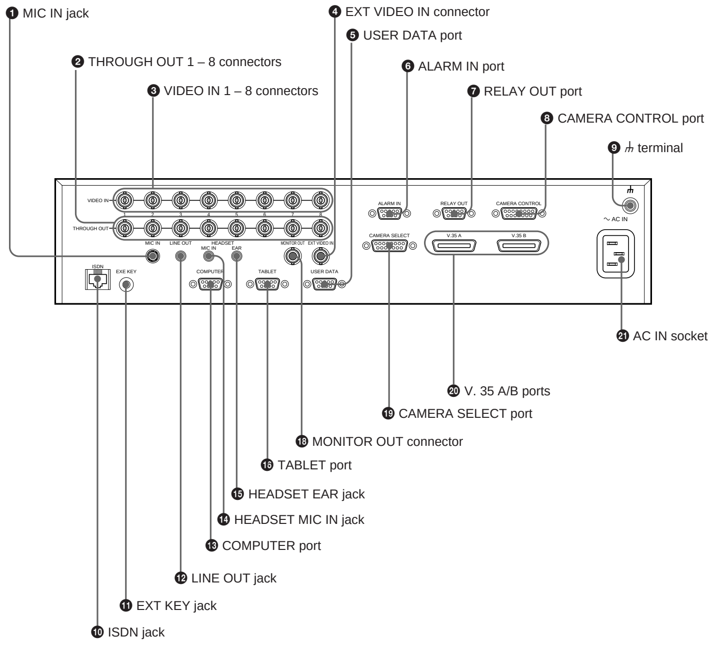
Location and Function of Controls

Rear (PMS-500P)


❶ MIC IN jack
❷ THROUGH OUT 1 – 8 connectors
❸ VIDEO IN 1 – 8 connectors
❹ EXT VIDEO IN connector
❺ USER DATA port
❻ ALARM IN port
❼ RELAY OUT port
❽ CAMERA CONTROL port
❾ ⏚ terminal
⑩ ISDN jack
⑪ EXT KEY jack
⑫ LINE OUT jack
⑬ COMPUTER port
⑭ HEADSET MIC IN jack
⑮ HEADSET EAR jack
⑯ TABLET port
⑰ VIDEO OUT connector
⑱ MONITOR OUT connector
⑲ CAMERA SELECT port
⑳ V. 35 A/B ports
㉑ AC IN socket

Rear of Monitoring Codec (PMS-500P)

Rear (PMS-400P)


① MIC IN jack
② THROUGH OUT 1 – 8 connectors
③ VIDEO IN 1 – 8 connectors
④ EXT VIDEO IN connector
⑤ USER DATA port
⑥ ALARM IN port
⑦ RELAY OUT port
⑧ CAMERA CONTROL port
⑨ ⏚ terminal
VIDEO IN
THROUGH OUT
MIC IN
LINE OUT
HEADSET
MIC IN
EAR
MONITOR OUT
EXT VIDEO IN
ALARM IN
RELAY OUT
CAMERA CONTROL
CAMERA SELECT
V.35 A
V.35 B
~ AC IN
ISDN
EXT KEY
COMPUTER
TABLET
USER DATA
㉑ AC IN socket
⑳ V. 35 A/B ports
⑲ CAMERA SELECT port
⑱ MONITOR OUT connector
⑯ TABLET port
⑮ HEADSET EAR jack
⑭ HEADSET MIC IN jack
⑬ COMPUTER port
⑫ LINE OUT jack
⑪ EXT KEY jack
⑩ ISDN jack

Rear of Monitoring Codec (PMS-400P)

① MIC IN jack (4 pin, female)
Connect the microphone.

② THROUGH OUT 1 – 8 connectors (BNC-type)
Outputs the video signal input from the VIDEO IN 1 – 8 connectors.

③ VIDEO IN 1 – 8 connectors (BNC-type)
Connect the video equipment.

④ EXT VIDEO IN connector (BNC-type)
Connect the camera switcher.
Inputs the video signal of a camera (9 – 256) connected to the camera switcher.

⑤ USER DATA port (D-sub 9-pin, male)
Connect another device which has the RS-232C port for data transmission. (DTE standards)
This port can be set to the RS-232C or the RS-485 interface. When you set this port to the RS-485 interface, you cannot use this port.
This port is set to the RS-232C interface at the factory setting.

⑥ ALARM IN port (D-sub 9-pin, male)
Connect the alarm generator. An alarm signal is input to this port.

⑦ RELAY OUT port (D-sub 9-pin, male)
This port is set to INPUT for PMS-500P and to OUTPUT for PMS-400P at the factory.

⑧ CAMERA CONTROL port (D-sub 15-pin, male)
Connect the camera controller.
This port is set to INPUT for PMS-500P and to OUTPUT for PMS-400P at the factory.

⑨ ⏚ (ground) terminal
Connect to ground line.

⑩ ISDN jack (8-pin modular)
Connect to the ISDN line with the supplied ISDN modular cable.

⑪ EXT KEY jack (minijack)
Connects the RM-PJ10 Remote Control Receiver (not supplied).

⑫ LINE OUT jack (pin jack)
Outputs audio signal input from the MIC IN jack.

⑬ COMPUTER port (D-sub 9-pin, male)
Connect another device which has the RS-232C port for data transmission. (DTE standards)
This port is set to the RS-232C interface at the factory.

⑭ HEADSET MIC IN jack (minijack)
Connect the microphone miniplug of the headset.

⑮ HEADSET EAR jack (minijack)
Connect the headphones miniplug of the headset.

⑯ TABLET port (D-sub 9-pin, male)
Connect the tablet (WACOM Art Pad II for Windows, not supplied.) This port is set to the RS-232C interface at the factory.

⑰ VIDEO OUT connector (BNC-type)
Connect the monitor for menu operations.

⑱ MONITOR OUT connector (BNC-type)
Connect the monitor for monitoring the picture input from the VIDEO IN 1 – 8 or the EXT VIDEO IN connector.

⑲ CAMERA SELECT port (D-sub 15-pin, male)
Connect the camera switcher to switch the picture of cameras connected to the camera switcher.

⑳ V. 35 A/B ports (half-pitch 36-pin)
Connect to the terminal adaptor with the V.35 cable (not supplied.)

㉑ AC IN (inlet) socket
Connect to an AC outlet with the supplied AC power cord.

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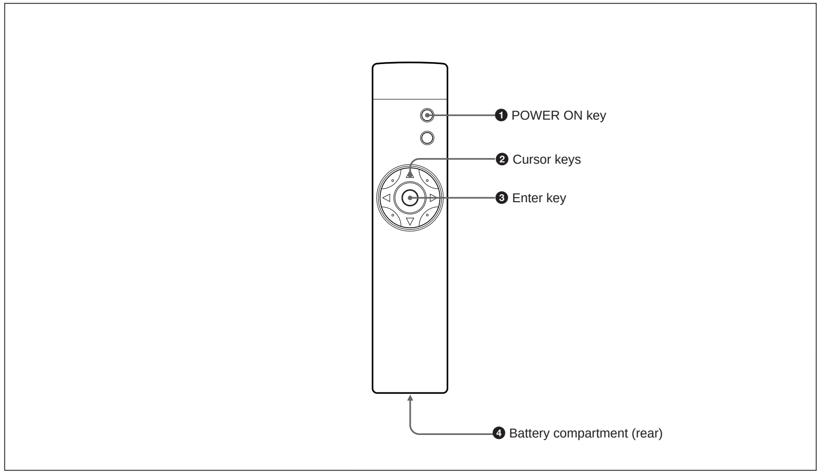
Remote Commander (PCS-R500) (not supplied)



Remote Commander

❶ POWER ON key
Pressing this key when the Monitoring Codec is in the standby mode turns the Monitoring Codec power on.

Note
You cannot turn off the Monitoring Codec with this key.

❷ Cursor keys (◀, ▲, ▶, ▼)
Press these keys to move the cursor.

❸ Enter key
Press this key to confirm the operation.

❹ Battery compartment (rear)
Insert two size AA (LR6) alkaline batteries.

Transmitting Data

You can transmit data from a device connected to the USER DATA port between Monitoring Codecs via ISDN.

Connecting a Device to the USER DATA Port

Connect the RS-232C port of the device and the USER DATA port of the Monitoring Codec with the RS-232C cable.

Use an appropriate RS-232C cable that complies with the USER DATA port standards.
For details on pin assignment of the USER DATA port, see “Pin Assignment” on page A-11 (E).

Data Transmission Format

The data transmission format is as follows:
Baud rate : 1200/4800/9600/19200 bps
Data word length : 7/8 bits
Parity bits : none/odd/even
Stop bits : 1/1.5/2 bits

For details, see “Setting Up the USER DATA Port” on page 2-25 (E).

Troubleshooting

If the Monitoring Codec system does not function or functions incorrectly, check the following

Cause and Remedy

Symptom	Cause	Remedy
The main menu is not displayed.	The Monitoring Codec is not turned on.	Press the POWER switch. (page 1-7 (E))
	The Remote Commander batteries are dead.	Replace the batteries. (page 1-6 (E))
	The Monitoring Codec and monitor are not connected properly.	Check the connection. (pages 1-4 (E), 1-5 (E))
	The monitor is not turned on.	Turn on the monitor.
	The main menu isn't set to display.	Set 20. MENU to ON in the SETTING menu. (page 2-18 (E))
	The Monitoring Codec is in the standby mode.	Press any key on the unit. Press POWER ON on the Remote Commander. Select any location on the tablet.
No sound or little sound	Volume setting is too low.	Adjust the volume in 12. AUDIO MIC LEVEL in the SETTING menu (page 2-14 (E)).
	Volume is disabled.	Set 13. AUDIO-HEADSET to HIGH or LOW in the SETTING menu. (page 2-15 (E))
	Microphone, headset, or speaker are not connected.	Connect microphone, headset or speaker. (pages 1-4 (E), 1-5 (E))
Blurred image	Out of focus.	Adjust the focus in CAM CTR in the main menu. (page 3-13 (E)) Adjust the camera focus.
No picture	The number of cameras connected to the Monitoring Codec is not registered.	Register the number of cameras in 18.CAMERA in the SETTING menu. (page 2-27 (E))
	Camera is not connected properly.	Check the connection. (pages 1-4 (E),1-5 (E))
	Camera iris is closed.	Adjust the iris in CAM CTR in the main menu. (page 3-13 (E)) Adjust the camera iris.
	Camera number is not selected.	Select a camera number in CAM SEL in the main menu. (page 3-11 (E))
	The picture is switched to a camera number whose signal is not input in the camera auto scan mode.	Cancel the camera auto scan mode. (page 3-12 (E))
Cannot connect to a remote site.	The line is not connected.	Check the ISDN line connection. (pages 1-4 (E),1-5 (E))
	The telephone number of the remote site is not registered.	Register the telephone number in 5. List (NORMAL) in the SETTING menu. (page 2-30 (E))

ISDN cause codes

If the connection failed via ISDN, the Monitoring Codec displays the ISDN cause code which is sent by ISDN network to show you the call status information.

Code	Meaning	Code	Meaning
1	Unallocated (unassigned) number	57	Bearer capability not authorized
2	No route to specified transit network	58	Bearer capability not presently available
3	No route to dest	63	Service or option not available, unspecified
6	Channel unacceptable	65	Bearer capability not implemented
7	Call awarded and being delivered in an established channel	66	Channel type not implemented
16	Normal clearing	69	Requested facility not implemented
17	User busy	70	Only restricted digital information bearer capability is available
18	No user responding	79	Service or option not implemented, unspecified
19	User alerting, no answer	81	Invalid call reference value
20	No reply	82	Identified channel does not exist
21	Call rejected	83	A suspended call exists, but this call identity does not
22	Number Changed	84	Call identity in use
26	Non-selected user clearing	85	No call suspended
27	Destination out of order	86	Call having the requested call identity has been cleared
28	Invalid number format (incomplete address)	88	Incompatible destination
29	Facility rejected	91	Invalid transit network selection
30	Response to STATus ENQuiry	95	Invalid message, unspecified
31	Normal, unspecified	96	Mandatory information element is missing
34	Circuit/channel congestion	97	Message type non-exist, or not implemented
38	Network out of order	98	Message not compatible with call state or message type non-existent or not implemented
41	Temporary failure		
42	Switching equipment congestion	99	Information element non-existent or not implemented
43	Access information discarded	100	Invalid information element contents
44	Requested channel not available	101	Message not compatible with call state
47	Resource unavailable, unspecified	102	Recovery of timer expiry
49	Quality of service unavailable	111	Protocol error, unspecified
50	Requested facility not subscribed	127	Interworking, unspecified

Specifications

Monitoring Codec

Motion video

Operating bandwidth	64 Kbps/128 Kbps
Coding	H.261 (ITU-T recommendation)
Picture elements	CIF 352 pixel × 288 lines
Frame rate	Maximum 15 frames per second
Color system	PAL (Mutually connectable with NTSC system.)

Audio

Bandwidth	3.4 kHz (ITU-T recommendation G.728)
Transfer rate	16 Kbps (ITU-T recommendation G.728)

Network

Multiplexing	Video, audio, data
Frame format	H.221 (ITU-T recommendation)
Interface	ISDN (BRI)

Tablet input

Interface	RS-232C
Baud rate	9600 bps

User data I/O

Interface	RS-232C
Baud rate	1200/4800/9600/19200 bps

Power/General

Power requirements	AC 220 – 240 V, 50/60 Hz
Power consumption	0.35 A
Operating temperature	5°C to 35°C (41°F to 94°F)
Operating humidity	20% to 80% (no condensation)
Storage temperature	–20°C to 60°C (–4°F to 140°F)
Storage temperature	20% to 80% (no condensation)
Dimensions	424 × 88 × 356 mm ($16\,^{3}/_{4} \times 3\,^{1}/_{2} \times 14$ inches) excluding projecting parts (w/h/d)
Mass	7.0 kg (15 lb 7 oz)
Accessories supplied	Menu sheet (1) ISDN modular cable (3 m) (1) AC Power cord (1) Operating Instructions (1)

Design and specifications are subject to change without notice.

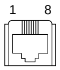
Remote Commander (PCS-R500) (not supplied)

Signal format	Infrared SIRCS
Control	Power-on, Cursor control
Power requirements	DC 3 V using two size AA (LR6) alkaline batteries
Dimensions	42 × 27 × 184 mm ($1\,^{11}/_{16} \times 1\,^{1}/_{8} \times 7\,^{3}/_{8}$ inches) (w/h/d)
Mass	Approx. 130 g (5 oz) (including batteries)
Accessories supplied	Size AA (LR6) alkaline batteries (2)

Design and specifications are subject to change without notice.

Pin Assignment

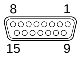
ISDN jack



Modular jack

Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	NC	—	5	RB	Receive–
2	NC	—	6	TB	Transmit–
3	TA	Transmit+	7	NC	—
4	RA	Receive+	8	NC	—

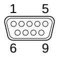
CAMERA SELECT port (female)



D-sub 15-pin port

Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	DGND	Digital ground	9	VISEL7	Camera select7
2	VISEL0	Camera select 0	10	ON LINE	On line
3	VISEL1	Camera select 1	11	ALARM OUT	Alarm out
4	VISEL2	Camera select 2	12	DGND	Digital ground
5	VISEL3	Camera select 3	13	DGND	Digital ground
6	VISEL4	Camera select 4	14	RS-485A	RS-485+
7	VISEL5	Camera select 5	15	RS-485B	RS-485–
8	VISEL6	Camera select 6	—	—	

COMPUTER port (male)



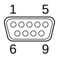
D-sub 9-pin port

Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	NC (DCD)	(Data carrier detect)	6	DSR	Data set ready
2	RxD	Receive data	7	RTS	Request to send
3	TxD	Transmit data	8	CTS	Clear to send
4	DTR	Data terminal ready	9	NC	—
5	GND	Ground	—	—	—

Notes

- Pins 4 and 6 have a short-circuit inside the unit.
- Pins 7 and 8 have a short-circuit inside the unit.

TABLET port (male)



D-sub 9-pin port

When setting to the RS-232C interface

Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	NC (DCD)	(Data carrier detect)	6	DSR	Data set ready
2	RxD	Receive data	7	RTS	Request to send
3	TxD	Transmit data	8	CTS	Clear to send
4	DTR	Data terminal ready	9	NC	—
5	GND	Ground	—	—	—

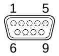
When setting to the RS-422 interface

Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	NC	—	6	NC	—
2	TB	Transmit +	7	TA	Transmit –
3	RA	Receive –	8	RB	Receive +
4	NC	—	9	NC	—
5	GND	Ground	—	—	—

Note

Pins 4 and 6 have a short-circuit and pins 7 and 8 are used as a flow control signal when setting to the RS-232C interface.

USER DATA port (male)



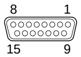
D-sub 9-pin port

Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	NC (DCD)	(Data carrier detect)	6	DSR	Data set ready
2	RxD	Receive data	7	RTS	Request to send
3	TxD	Transmit data	8	CTS	Clear to send
4	DTR	Data terminal ready	9	NC	—
5	GND	Ground	—	—	—

Notes

- This port can be used as either the RS-232C or the RS-485 interface. If this is used as the RS-485 interface, pins 14 and 15 of the CAMERA SELECT port are used for the RS-485 interface.
- Pins 4 and 6 have a short-circuit and pins 7 and 8 are used as a flow control signal when setting to the RS-232C interface.

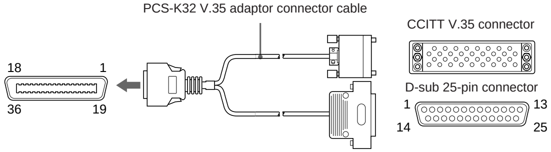
CAMERA CONTROL port (female)



D-sub 15-pin port

Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	C1	Tilt ↑	9	C9	Iris –
2	C2	Tilt ↓	10	C10	Iris +
3	C3	Pan →	11	C11	AUX1
4	C4	Pan ←	12	C12	AUX2
5	C5	Zoom –	13	GND	Ground
6	C6	Zoom +	14	GND	Ground
7	C7	Focus –	15	GND	Ground
8	C8	Focus +	—	—	

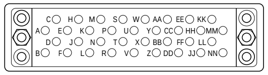
V.35 (A/B) port (female)



Half-pitch 36-pin port

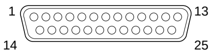
Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	SGND	Signal ground	19	SGND	Signal ground
2	SGND	Signal ground	20	SGND	Signal ground
3	CABLE1	CABLE1	21	CABLE2	CABLE2
4	V35SD+	Send data+	22	V35RI	Ring Indication
5	V35SD–	Send data–	23	V35DR	Data set ready
6	V35RD+	Receive data+	24	366DLO	Data line occupied
7	V35RD–	Receive data–	25	V35CS	Clear to send
8	V35ER	Data terminal ready	26	366ACR	Abandon call &retry
9	V35RS	Request to send	27	366DPR	Digit present
10	V35ST+	Send Timing+	28	366CRQ	Call request
11	V35ST–	Send Timing–	29	366PND	Present next digit
12	V35RT+	Receive Timing+	30	366NB1	Digit signal 1
13	V35RT–	Receive Timing–	31	366NB2	Digit signal 2
14	V35TT+	Transmit Timing+	32	366NB4	Digit signal 4
15	V35TT–	Transmit Timing–	33	366NB8	Digit signal 8
16	SGND	Signal ground	34	SGND	Signal ground
17	SGND	Signal ground	35	SGND	Signal ground
18	CGND	Chassis ground	36	SGND	Signal ground

CCITT V.35 connector (cable side)



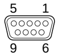
Pin	Signal	Description
A	CGND	Chassis ground
B	SGND	Signal ground
C	V35RS	Request to send
D	V35CS	Clear to send
E	V35DR	Data set ready
H	V35ER	DTE ready
J	V35RI	Ring indicator
P	V35SD+	Send data+
R	V35RD+	Receive data+
S	V35SD–	Send data–
T	V35RD–	Receive data–
U	V35TT+	Transmit timing+
V	V35RT+	Receive timing+
W	V35TT–	Transmit timing–
X	V35RT–	Receive timing–
Y	V35ST+	Send timing+
AA	V35ST–	Send timing–

D-sub 25-pin connector (cable side)



Pin	Signal	Description
1	SGND	Signal ground
2	366DPR	Digit present
3	366ACR	Abandon call & retry
4	366CRQ	Call request
5	366PND	Present next digit
7	SGND	Signal ground
14	366NB1	Digit signal 1
15	366NB2	Digit signal 2
16	366NB4	Digit signal 4
17	366NB8	Digit signal 8
18	SGND	Signal ground
19	SGND	Signal ground
22	366DLO	Data line occupied

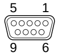
ALARM IN port (female)



D-sub 9-pin port

Pin	Meaning	Pin	Meaning
1	Port 1	6	Port 6
2	Port 2	7	Port 7
3	Port 3	8	Port 8
4	Port 4	9	Ground
5	Port 5	–	–

RELAY OUT port (female)



D-sub 9-pin port

Pin	Meaning	Pin	Meaning
1	Port 1	6	Port 6
2	Port 2	7	Port 7
3	Port 3	8	Port 8
4	Port 4	9	Ground
5	Port 5	–	–

Glossary

Codec
An abbreviation for Coder-Decoder. An electronic device that converts an analog signal such as voice or video to a digital data stream, compresses it, and sends it over a digital communications line. Another codec reverses the process at the receiving site.

Compression
A task where a codec compresses data before sending it over a digital communications line.

Interface
A protocol connecting two different devices so that they can communicate with each other.

ISDN
An acronym for Integrated Services Digital Network. This is a communications protocol defined by CCITT on transmission of integrated voice, video, and data. Bandwidths include basic (64 Kbps) and primary rate (1.544 and 2.048 Mbps.)

Menu
A collection of settings shown on the TV monitor which the user can change.

PinP
An abbreviation for Picture-in-Picture. This function allows the user, while keeping the remote scene on the TV monitor, to display the local scene in a smaller window on the same TV monitor.

Subaddress
One ISDN line can support up to 8 devices. Because all these devices share the same line number, subaddresses are applied to them so that each has a unique number.

Zoom
With the camera remaining stationary, by adjusting the zoom lens you can quickly move in or out on an object.

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SECTION 2
INSTALLATION

The monitoring codec (PMS-500P/400P) or the video transmitter (RSE-500/400) (called this unit hereafter) is connected with a video camera, monitor, and other equipment and used as the system via an ISDN line.

2-1. CONNECTION OF ISDN LINE

This unit is designed for S/T point interface ISDN.
When the network interface is U point, it should be connected via a network terminator (NT-1 or DSU).
In this unit, HLC (High Layer Compatibility) code is not used for making a call, and for incoming call can accept no HLC or telephone (code 01).
BC (Bearer Capability) code is defined for Unrestricted digital.
Please take note of the TA (Terminal adapter) setting, so that any competition with this unit does not occur, when using TA with DSU, or when other equipment connected simultaneously to the S/T point exists.
When RSE-500/400 is used in North America, communication may not start if the terminal used is not properly recognized on the network side during the power-on sequence with the SPID (service provider identifier) set. (Refer to section 2-5 of the manual.)
When RSE-500/400 is used in North America , the ISDN capability package is prescribed by Bellcore so as to simplify the subscription of an ISDN line.
Package M can be used in this unit.
If the type of an ISDN line does not apply, the line is connected in the unstable state or cannot be connected properly.
This unit is also not internally terminated at 100 ohms. Therefore, a switch must be set or a terminating modular jack must be connected so that this unit is terminated on the NT-1 side when it is connected via NT-1.

2-2. CONNECTION OF EXTERNAL EQUIPMENT

Connection of Alarm Input

A switch that can be simply opened and closed can be connected to the alarm input terminal. However, the alarm input signal is a TTL level signal and is not electrically insulated from an internal circuit. Therefore, measures must be taken for a noise if the place where an alarm sensor and this unit are installed is away from each other.

Control of Camera and Pan Tilter

The CAMERA CONTROL connector is used to control the camera and pan tilter.
This connector can be switched to the input or output modes. In the input mode, the same caution as for an alarm input is required. In the output mode, the output signal is used as an open collector output.
The maximum rating is 40 V/40 mA. Then if the voltage or current required exceeds the maximum rating, it is necessary to prepare an external interface such as a relay box.

Control of Other Equipment

The PARALLEL I/O connector of the same interface as for the control of a camera and pan tilter is used in this case. Therefore, pay the same attention as for the camera control when using other equipment. The camera number selected inside this unit is output to the CAMERA SELECT terminal in binary. A maximum of 256 cameras can be selected by decoding the camera number.

Connection of Serial Communication Equipment

This unit has three RS-232C interfaces for communication with the external equipment.
The computer connector is connected to the personal computer so as to enable the control using GUI.
The command sequence and usable commands are described in section 3 COMPUTER INTERFACE SPECIFICATION.
The TABLET connector can easily control this unit by connecting ARTPAD2 (made by WACOM).
Moreover, the serial communication equipment can also be used as a data communication port without protocol. In this case, an electric interface can also be used as RS-422. The switch setting in this unit is required when using the interface as RS-422. (Refer to 4-5 SWITCH SETTING.)
The USER DATA connector can be used as a data communication port without protocol. This port can also be electrically used as RS-485. The switch setting in this unit must be changed in this case.
YS-S104 can be connected to extend to eight video inputs when using the port as RS-485.

1. Since an RS-485 signal is output to pins 14 and 15 of the CAMERA SELECT terminal, it is connected to the Inteligent sequential switcher YS-S104 (for CE only).
2. The ID number of YS-S104 is set as “1”.
3. The EXT VIDEO IN terminal of this unit is connected to the SPOT MON terminal of YS-S104.

Connection of Camera and Video Equipment

The signal connected to the VIDEO IN terminal is directly output to the THROUGH OUT terminal. The resistance is automatically terminated in 75 ohms when no cable is connected to the THROUGH OUT terminal.

Notes:

1) **The power voltage must be less than 40 V when the DC power for the camera is added to a video signal.**
2) **The terminating resistance of the THROUGH OUT terminal is turned on and off by locking the BNC connector. Therefore, turn the connector until it is firmly locked when connecting the cable.**
3) **When the DC power is added to the VIDEO IN terminal, turn off the added power and then connect the cable. If not, the overcurrent flowing through the terminating resistance may damage the power for addition or the terminating resistance.**

Connection of Audio Equipment

The MIC IN terminal (round type, 4-pin) and the MIC IN terminal (mini-jack) for a headset are available.
These terminals are mixed internally.
The optional cables below can be used when connecting the XLR connector to the MIC IN terminal.

EC-0.4CM	45 cm XLR (male)
EC-0.4CF	45 cm XLR (female)

The LINE OUT terminal (pin jack) and headset (mini-jack) are available for the audio output. To drive speakers, they must be amplified using an external amplifier.

2-3. ISDN CAUSE CODE

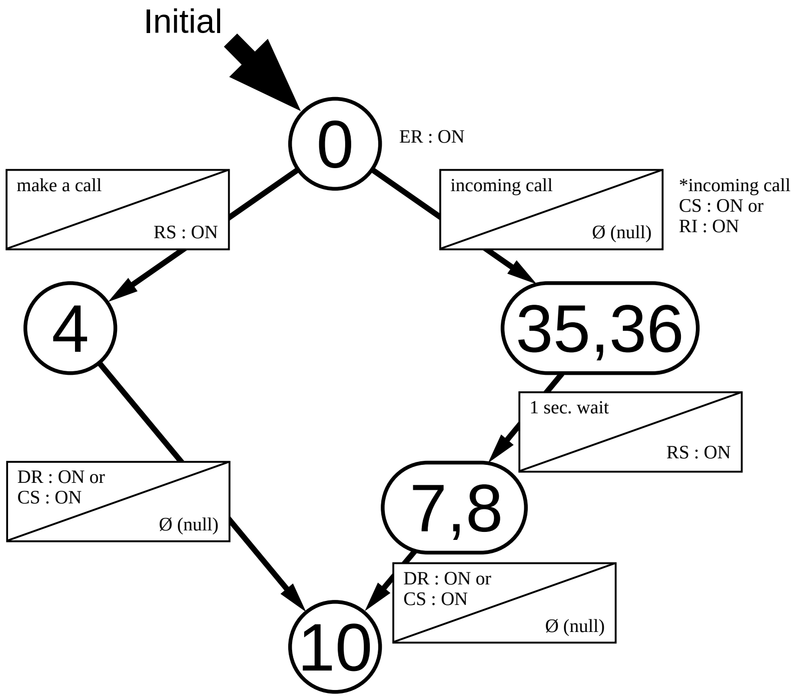
When no connection could be normally performed in an ISDN line, the corresponding reason may be returned via a network. In this case, this unit displays the reason as a cause code. The contents of each code are shown in the table below.

Code	Meaning	Code	Meaning
1	Unallocated (unassigned) number	57	Bearer capability not authorized
2	No route to specified transit network	58	Bearer capability not presently available
3	No route to dest	63	Service or option not available, unspecified
6	Channel unacceptable	65	Bearer capability not implemented
7	Call awarded and being delivered in an established channel	66	Channel type not implemented
16	Normal clearing	69	Requested facility not implemented
17	User busy	70	Only restricted digital information bearer capability is available
18	No user responding	79	Service or option not implemented, unspecified
19	User alerting, no answer	81	Invalid call reference value
20	No reply	82	Identified channel does not exist
21	Call rejected	83	A suspended call exists, but this call identity does not
22	Number Changed	84	Call identity in use
26	Non-selected user clearing	85	No call suspended
27	Destination out of order	86	Call having the requested call identity has been cleared
28	Invalid number format (incomplete address)	88	Incompatible destination
29	Facility rejected	91	Invalid transit network selection
30	Response to STATus ENQuiry	95	Invalid message, unspecified
31	Normal, unspecified	96	Mandatory information element is missing
34	Circuit/channel congestion	97	Message type non-exist, or not implemented
38	Network out of order	98	Message not compatible with call state or message type non-existent, or not implemented
41	Temporary failure		
42	Switching equipment congestion	99	Information element non-existent or not implemented
43	Access information discarded	100	Invalid information element contents
44	Requested channel not available	101	Message not compatible with call state
47	Resource unavailable, unspecified	102	Recovery of timer expiry
49	Quality of service unavailable	111	Protocol error, unspecified
50	Requested facility not subscribed	127	Interworking, unspecified

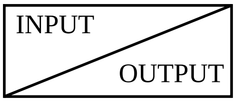
2-4. V.35 STATE TRANSITION DIAGRAM

The operation diagram of this unit is shown below for reference of the TA setting when connecting TA of V.35.

2-4-1. Incoming call or make a call without RS-366

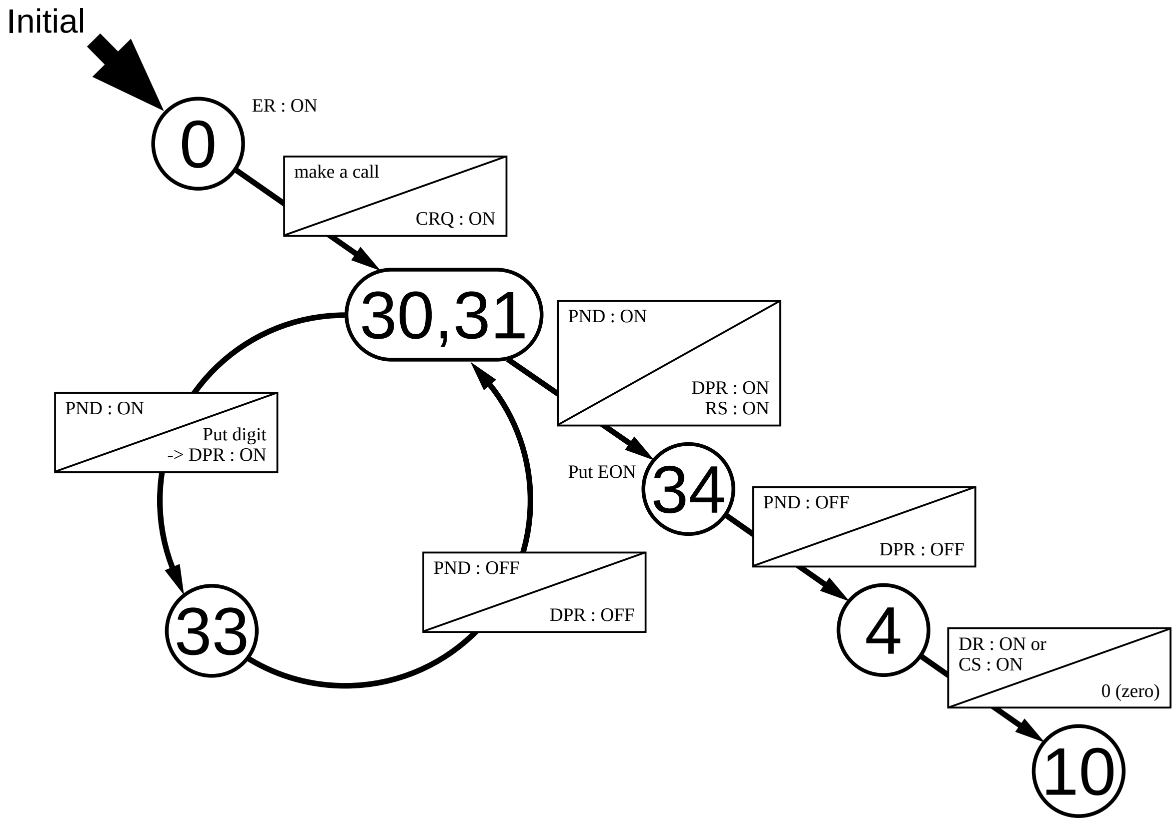

Initial
0
ER : ON
make a call
RS : ON
incoming call
Ø (null)
*incoming call
CS : ON or
RI : ON
4
35,36
1 sec. wait
RS : ON
7,8
DR : ON or
CS : ON
Ø (null)
DR : ON or
CS : ON
Ø (null)
10

The point of view for INPUT and OUTPUT


INPUT
OUTPUT

RS	Request to send
ER	Equipment ready
CS	Clear to sent
DR	Data set ready
RI	Ring indication
CRQ	Call request
DLO	Data line occupied
PND	Present next digit
DPR	Digit present
ACR	Abandon call & retry

2-4-2. Make a call with RS-366


Initial
0
ER : ON
make a call
CRQ : ON
30,31
PND : ON
DPR : ON
RS : ON
PND : ON
Put digit
-> DPR : ON
Put EON
34
PND : OFF
DPR : OFF
33
PND : OFF
DPR : OFF
4
DR : ON or
CS : ON
0 (zero)
10

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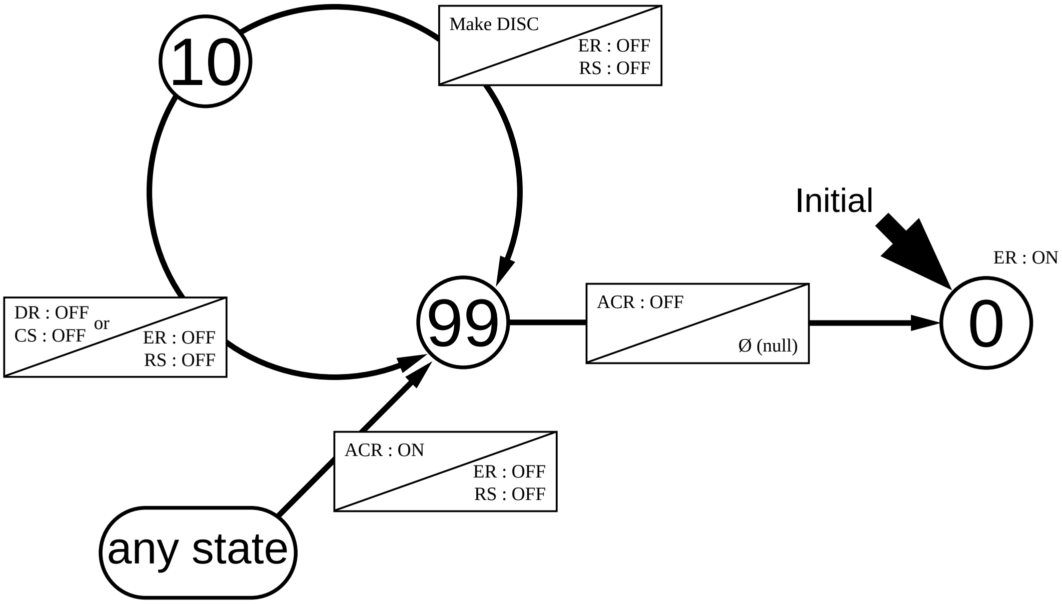
2-4-3. Disconnect


10
Make DISC
ER : OFF
RS : OFF
Initial
ER : ON
DR : OFF
CS : OFF
or
ER : OFF
RS : OFF
99
ACR : OFF
Ø (null)
0
ACR : ON
ER : OFF
RS : OFF
any state

2-5. FLUSH MEMORY

This unit stores a system parameter, alarm input log information, and other information in flush memory. The flush memory is erased to update these information items when the setting is completed (a beep sounds) and when a line is disconnected. New information is then written. Therefore, notice that the data in flush memory is destroyed when the power is turned off during information write.

SECTION 3
COMPUTER INTERFACE SPECIFICATION

3-1. DESCRIPTION

The PMS-500P/400P or RSE-500/400 is operated using the cursor keys on the front panel of the main unit or an optional remote control unit. The PMS-500P/400P or RSE-500/400 can be easily operated using a man-machine interface (MMI) when the recommended tablet (option) is installed in the tablet port on the rear panel.
The PMS-500P/400P or RSE-500/400 has a computer interface as a standard feature. The PMS-500P/400P or RSE-500/400 can freely perform the parameter setting and online operation using an excellent GUI when an external computer is connected to the computer (RS-232C, 9600 bps, 81N) port. For the control operation from a computer, assume that the PMS-500P/400P or RSE-500/400 directly connected using an RS-232C cable (cross cable) is called “local” and that the unit connected via an ISDN line is called “remote”. In this case, “local” can be controlled in offline, and “local” and “remote” can be controlled in online. The computer interface command conforms to the variable-length packet format.
The command format, command sequence, command list, and command application are described below.

3-2. COMMAND FORMAT

1	1	5	3	Variable	1	Variable
#	(a)	(b)	(c)	(d)	(e)	(f)

Number of bytes

A command must begin with “#”.

(a) Command type (One-byte)
‘L’ : Sets or controls parameters for local.
‘l’ : Acquires parameters for local.
‘R’ : Sets or controls parameters for remote.
‘r’ : Acquires parameters for remote.

(b) Command code (Five-byte)
For example, the command for setting and acquiring the ID name is “01000”.

(c) Operand length
The number of bytes in an operand is prescribed in decimal three digits (e.g., “012”).
When there is no operand, “000” is represented.

(d) Operand
Setting and acquisition data

(e) Delimiter
The Cr (0DH) fixed value is set as the terminator of a command.

(f) Other data
System parameter data is used here.

For example, the command when the local ID name is set to ”SONY” is as shown below.
“ #L01000004SONYCr ”

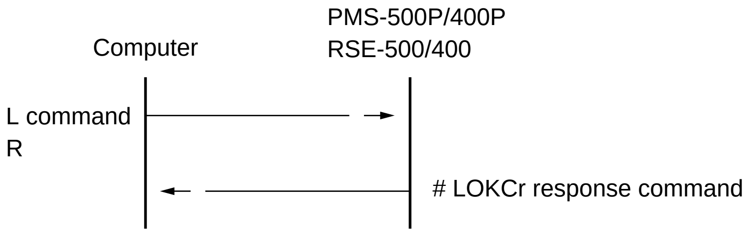
3-3. COMMAND SEQUENCE

When a computer interface command is issued, a response message is returned using the computer interface command.
In this case, the command sequence is shown below.

3-3-1. Set Command

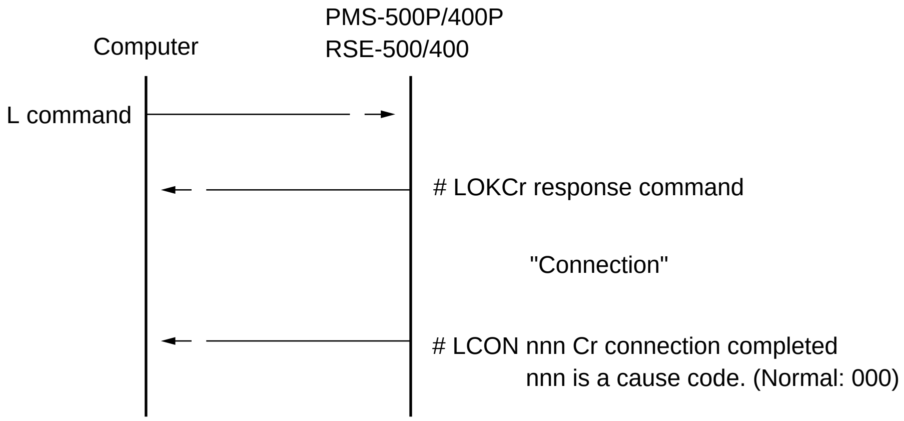
The set command format for local is “#L...Cr”, and the set command format for remote is “#R...Cr”.
A “#LOKCr” command is returned when these commands are issued.
To set 32k-byte system data, send 1024 bytes + checksum data after confirming this response command.

· For normal set command

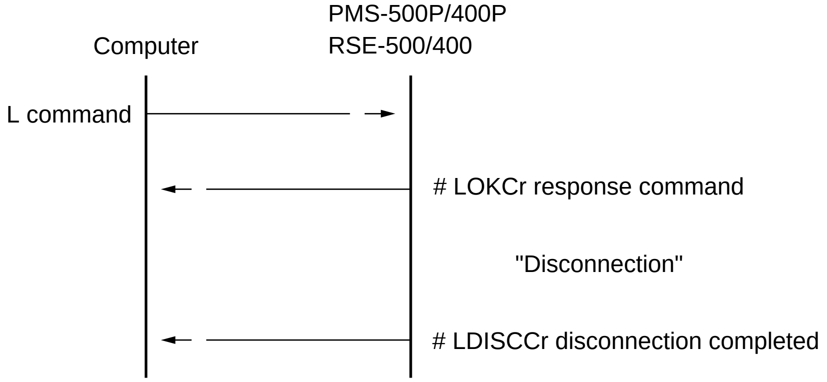

PMS-500P/400P
RSE-500/400
Computer
L command
R
# LOKCr response command

For the set command sequence below, an additional sequence is added.

· For CONNECT command (31001)

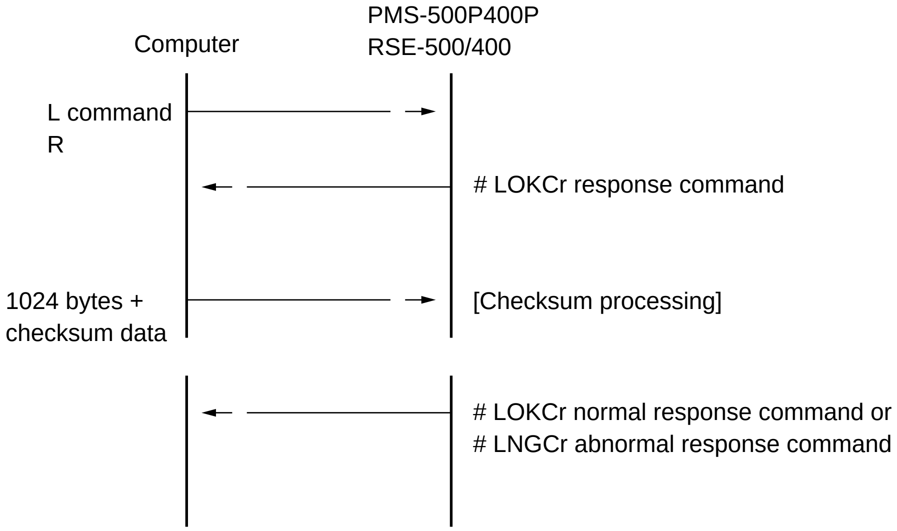

PMS-500P/400P
RSE-500/400
Computer
L command
# LOKCr response command
"Connection"
# LCON nnn Cr connection completed
nnn is a cause code. (Normal: 000)

· For DISCONNECT command (31002)


PMS-500P/400P
RSE-500/400
Computer
L command
# LOKCr response command
"Disconnection"
# LDISCCr disconnection completed

· For 32k-byte SYS PARAM (73???) command

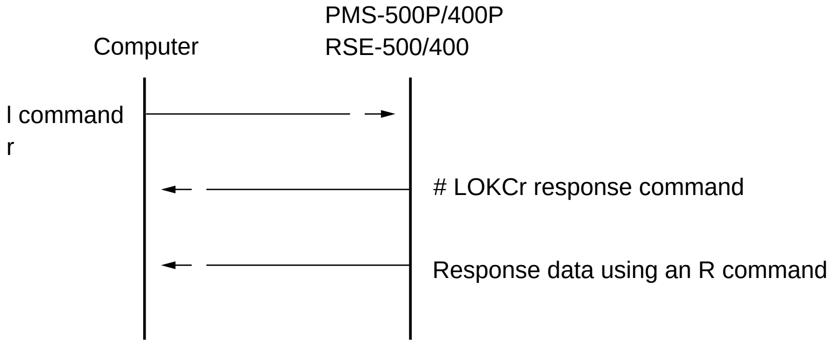
Send 1024 bytes + checksum data after the response data (#LOKCr) to a command is received.



Computer
PMS-500P400P
RSE-500/400
L command
R
# LOKCr response command
1024 bytes +
checksum data
[Checksum processing]
# LOKCr normal response command or
# LNGCr abnormal response command

3-3-2. Acquisition Command

The acquisition command format for local is “#l...Cr”, and the acquisition command format for remote is “#r...Cr”. “#LOKCr” command is first returned when these commands are issued. After that, data is returned using a “#R...” command.



Computer
PMS-500P/400P
RSE-500/400
l command
r
# LOKCr response command
Response data using an R command

The response data using an R command (e.g., 73??? command) can be acquired in the following format.

#	R	7 3 ? ? ?	0 0 4	1 0 2 5	Cr	(1024-byte binary data)	Checksum
		Command	Length	Binary data length			

3-4. COMMAND LIST

3-4-1. Setup Command

NOTE : Multiple operand items use the tab (09H) as a delimiter if they are variable length.

Set Item	Command	Operand (number of bytes) and its contents	
ID NAME	01000	(10) ID name	
SITE NAME	01001	(20) Site name	
PASSWORD	01002	(1) Password on/off	
		→ 30h = off, 31h = on	
		(1) tab (09h)	
		(15) Password	
LIST (normal)	02???	(20) Terminal name	
		(1) tab (09h)	
	???=index	(1) 1B / 2B / S / D	
	000	→ 30h = 1B, 31h = 2B	
	to	→ 32h = SINGLE, 33h = DUAL	
	127	(1) tab (09h)	
		(22) Telephone number 1	
		(1) tab (09h)	
		(10) Sub address	
		(1) tab (09h)	(for RSE-500/400 only)
		(22) Telephone number 2	
		(1) tab (09h)	
		(10) Sub address	
LIST (alarm)	03???	(20) Terminal name	
		(1) tab (09h)	
	???=index	(1) 1B / 2B	
	000	→ 30h = 1B, 31h = 2B	
	to	→ 32h = SINGLE, 33h = DUAL	
	159	(1) tab (09h)	
		(22) Telephone number 1	
		(1) tab (09h)	
		(10) Sub address	
		(1) tab (09h)	(for RSE-500/400 only)
		(22) Telephone number 2	
		(1) tab (09h)	
		(10) Sub address	
LIST (receive)	04???	(20) Terminal name	
		(1) tab (09h)	
	???=index	(1) DUMMY (30h)	
	000	(1) tab (09h)	
	to	(22) Telephone number	
	127	(1) tab (09h)	

Set Item	Command	Operand (number of bytes) and its contents
TELEPHONE #	0 5 0 0 0	(2 2) Telephone number 1
		(1) tab (09h)
		(1 0) Sub address
		(1) tab (09h)
		(2 2) Telephone number 2
		(1) tab (09h)
		(1 0) Sub address
SPID / LDN	0 5 0 0 1	(3) Country code
		(1) tab (09h)
		(2 2) LDN 1
		(1) tab (09h)
		(1 0) Sub address 1
		(1) tab (09h)
		(2 2) LDN 2
		(1) tab (09h)
		(1 0) Sub address 2
		(1) tab (09h)
		(2 2) SPID 1
		(1) tab (09h)
		(2 2) SPID 2
2nd DIAL No.	0 5 0 0 2	(1) ON = 31h / OFF = 30h
		(1) tab (09h)
		(2 2) Telephone number
		(1) tab (09h)
		(1 0) Sub address
CAMERA	0 6 0 0 0	(3) Number of cameras
		→ '001' = 1 camera
		to
		→ '256' = 256 cameras
CALENDAR ∗	0 6 0 0 1	(1 2) Calenar
		YY → '01' to '99' = Year (Christian year)
		MM → '01' to '12' = Month
		DD → '01' to '31' = Day
		HH → '00' to '24' = Hour
		MM → '00' to '59' = Minute
		SS → '00' to '59' = Second
CAMERA AUTOSCAN	0 7 0 0 0	(5) Camera automatic scan time
		MMM → '000' to '999' = Minute
		SS → '00' to '59' = Second
TIMEOUT 1 Fail - safe (auto turn - off)	0 7 0 0 1	(5) Time - out 1 fail - safe (auto turn - off)
		MMM → '000' to '999' = Minute
		SS → '00' to '59' = Second
TIMEOUT 2 Low power	0 7 0 0 2	(5) Time - out 2
		MMM → '000' to '999' = Minute
		SS → '00' to '59' = Second

∗) In the operand of a calendar, the "YYMMDDHHMMSS" display appears. The display can also be read.

Set Item	Command	Operand (number of bytes) and its contents
MIC	0 8 0 0 0	(1) Microphone → 30h = high → 31h = low → 32h = off
AUDIO HEADSET	0 8 0 0 1	(1) Headset → 30h = high → 31h = low → 32h = off
RINGER	0 8 0 0 2	(1) Incoming volume and calling volume → 30h = high, 31h = off
PICTURE MODE	0 8 0 0 3	(1) Screen level → 30h = fine → 31h = normal → 32h = fast
P in P	0 8 0 0 4	(1) Screen level → 30h = Upper right → 31h = Lower right → 32h = Lower left → 33h = Upper left → 34h = off
DISPLAY MODE	0 8 0 0 5	(1) Display mode → 30h = Character → 31h = Superimpose → 32h = Video
CAMERA P I/O	0 9 0 0 0	(1) Camera PIO → 30h = input → 31h = output
KEY SOUND	0 9 0 0 1	(1) Key volume → 30h = off, 31h = on
MENU ON/OFF	0 9 0 0 2	(1) Online menu → 30h = off, 31h = on
AUDIO ON/OFF	0 9 0 0 3	(1) Audio → 30h = off, 31h = on (2) Rx high level → ‘01’ to ‘32’ (2) Rx low level → ‘01’ to ‘32’ (2) Tx high level → ‘01’ to ‘32’ (2) Tx low level → ‘01’ to ‘32’
RECEIVE ON/OFF	0 9 0 0 4	(1) Receive check → 30h = off → 31h = on

Set Item	Command	Operand (number of bytes) and its contents
COMMUNICATION	0 9 0 0 5	(1) MODE → 30h = 64k → 31h = 56k (1) V35PORT → 30h = DUAL → 31h = SINGLE (1) SINGLE RATE → ‘1’ to ‘6’
RECEIVE MODE	0 9 0 0 6	(1) MODE → 30h = AUTO → 31h = MANUAL
MAINTENANCE	0 9 0 0 7	(1) LOOPBACK → 30h = OFF → 31h = ON (1) DEBUG → 30h = OFF → 31h = ON
HEALTH CHECK	0 9 0 0 9	(1) MODE → 30h = OFF → 31h = ON
ALARM IN	1 0 ? ? ? ???=index 0 0 0 to 0 0 7	(1 7) Alarm name
P I/O	1 1 ? ? ? ???=index 0 0 0 to 0 0 7	(1) IN/OUT → 30h = input → 31h = output (1) tab (09h) (1 7) Port equipment connection name

Set Item	Command	Operand (number of bytes) and its contents
COMPUTER	1 2 0 0 0	(1) Baud rate
		→ 30h = 1200 Baud
		→ 31h = 2400 Baud
		→ 32h = 4800 Baud
		→ 33h = 9600 Baud
		→ 34h = 19200 Baud
		→ 35h = 38400 Baud
		(1) tab (09h)
		(1) Character bit
		→ 30h = 7 bits, 31h = 8 bits
		(1) tab (09h)
		(1) Parity
		→ 30h = NONE
		→ 31h = ODD
		→ 32h = EVEN
		(1) tab (09h)
		(1) Stop bit
		→ 30h = 1
		→ 32h = 2
RS-232C1	1 2 0 0 1	(1) Interface
		→ 30h = TABLET
		→ 31h = RS-232C
		→ 32h = RS422A
		→ 33h = CSP-5000
		(1) tab (09h)
		(1) Baud rate
		→ 30h = 1200 Baud
		→ 31h = 2400 Baud
		→ 32h = 4800 Baud
		→ 33h = 9600 Baud
		→ 34h = 19200 Baud
		→ 35h = 38400 Baud
		(1) tab (09h)
		(1) Character bit
		→ 30h = 7 bits, 31h = 8 bits
		(1) tab (09h)
		(1) Parity
		→ 30h = NONE
		→ 31h = ODD
		→ 32h = EVEN
		(1) tab (09h)
		(1) Stop bit
		→ 30h = 1
		→ 31h = 1.5
		→ 32h = 2

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Set Item	Command	Operand (number of bytes) and its contents
RS-232C2	1 2 0 0 2	(1) Interface
		→ 30h = RS-232C
		→ 31h = YS-S100 MASTER
		→ 32h = RS-485
		(1) tab (09h)
		(1) Baud rate
		→ 30h = 1200 Baud
		→ 31h = 2400 Baud
		→ 32h = 4800 Baud
		→ 33h = 9600 Baud
		→ 34h = 19200 Baud
		→ 35h = 38400 Baud
		(1) tab (09h)
		(1) Character bit
		→ 30h = 7 bits, 31h = 8 bits
		(1) tab (09h)
		(1) Parity
		→ 30h = NONE
		→ 31h = ODD
		→ 32h = EVEN
		(1) tab (09h)
		(1) Stop bit
		→ 30h = 1
		→ 31h = 1.5
		→ 32h = 2
FLUSH WRITE ∗	1 4 0 0 0	None

∗) A system parameter is written in flush memory when a flush write command is executed. Once information is written in the flush memory, it is not lost even if the power is turned off. This flush write command supports only ‘L’ and ‘R’.

3-4-2. Online Command

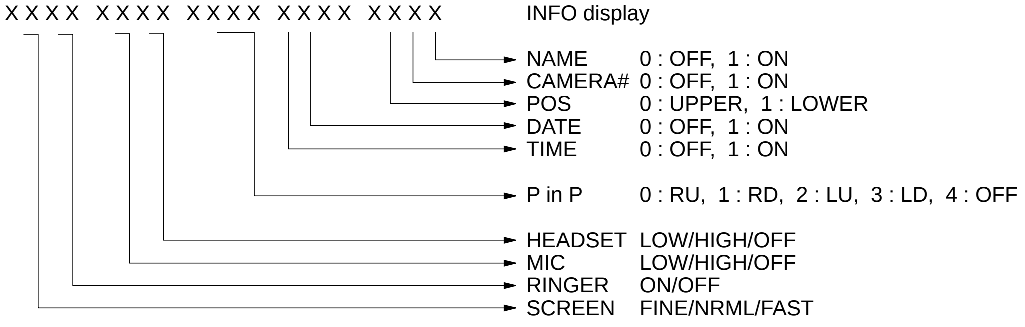
The setup command supports basically supports all of ‘L’, ‘l’, ‘R’, and ‘r’. However, the online command has a restriction because of its characteristics. For the command whose support is restricted, the restricted function (e.g., “L” is described in the column of a control function.)

Control function	Command	Operand (number of bytes) and its contents
GET INFO ∗ Ir	3 0 0 0 0	(5) Picture Mode Mic Level P in P Info #1 Info #2
CONNECT L (offline)	3 1 0 0 1	(1) 1 B / 2 B → 30h = 1 B, 31h = 2 B → 32h = SINGLE, 33h = DUAL → 34h = SD64-1 → 35h = SD64-2 → 36h = SD128 (1) tab (09h) (2 2) Telephone number 1 (1) tab (09h) (1 0) Sub address
DISCONNECT L (online)	3 1 0 0 2	None
CALL CANCEL L	3 1 0 0 3	None

***) The five-byte GET INFO operand is represented in hexadecimal. (0...A...F = 30H...41H...46H)**

The information acquired by the GET INFO function is assigned as follows:

Picture Mode	00XX : fine, 01XX : normal, 10XX : fast
Mic Level	(D3, D2 :Mic, D1, D0 : Line) 00XX : high, 01xx : low, 10xx : off
P in P	X000 : Right Upper, X001 : RD, X010 : LD, X011 : LU, X100 : off
Info#1	D3 : Time, D2 : information (0 : off, 1 : on)
Info#2	D2 : position (0 : lower, 1 : upper), D1 : camera, D0 : name (0 : off, 1 : on)


XXXX XXXX XXXX XXXX XXXX
INFO display
NAME 0 : OFF, 1 : ON
CAMERA# 0 : OFF, 1 : ON
POS 0 : UPPER, 1 : LOWER
DATE 0 : OFF, 1 : ON
TIME 0 : OFF, 1 : ON
P in P 0 : RU, 1 : RD, 2 : LU, 3 : LD, 4 : OFF
HEADSET LOW/HIGH/OFF
MIC LOW/HIGH/OFF
RINGER ON/OFF
SCREEN FINE/NRML/FAST

Control function	Command	Operand (number of bytes) and its contents
LIST CONNECT ✻	3 1 0 0 4	(2)
		00 - 3F (RSE-500/400)
L (offline)		00 - 7F (PMS-500P/400P)
BUSY	3 2 0 0 0	(1) ON/OFF
L1 (offline)		→ 30h = off, 31h = on
CAMERA SELECT	3 3 0 0 0	(3) Camera number
LR		→ 001 to 256
CAMERA	3 4 ? ? ?	(1) Set data
CONTROL		
	??? = 000	ZOOM 0 : OUT 1 : IN
	= 001	PAN 0 : ← 1 : →
	= 002	TILT 0 : ↑ 1 : ↓
	= 003	FOCUS 0 : NEAR 1 : FAR
LR	= 004	IRIS 0 : + 1 : −
INFORMATION	3 5 ? ? ?	(1) ON/OFF
		→ 30h = off, 31h = on
	??? = 000	DATA
	= 001	TIME
	= 002	NAME
	= 003	CAMERA NUMBER
LR	= 004	POSITION (0 : LOWER, 1 :UPPER)
MENU ON/OFF	3 6 0 0 0	(1) ON/OFF
L1		→ 30h = off, 31h = on
MIC	3 8 0 0 0	(1) Mode
LR		→ 30h : HIGH, 31h : LOW, 32h : OFF
AUDIO LINE	3 8 0 0 1	(1) Mode
LR		→ 30h : HIGH, 31h : LOW, 32h : OFF
PICTURE MODE	3 8 0 0 3	(1) Mode
LR		→ 30h : Fine, 31h : Normal, 32h : Fast
P in P	3 8 0 0 4	(1) Position
		→ 30h = Upper right
		→ 31h = Lower right
		→ 32h = Upper left
		→ 33h = Lower left
L		→ 34h = OFF
P I/O read	4 1 0 0 0	(8) Input bit information
		→ Set corresponding to 8 bits in 30h and 31h.
		76543210 bits
lr		Example) 10101010

***) Convert INDEX No. (RSE-500/400 : 1 - 64, PMS-500P/400P : 1 - 128) in DIAL LIST into hexadecimal, then substruct 1. The operand (RSE-500/400 : 00 - 3F, PMS-500P/400P : 00 - 7F) of LIST CONNECT is represented in hexadecimal.**

Control function	Command	Operand (number of bytes) and its contents
P I/O write LR	4 1 0 0 1	(8) Output bit information → Set corresponding to 8 bits in 30h and 31h. 76543210 bits Example) 10101010
Camera control LlRr	4 2 0 0 0	(1 0) Input/Output bit information → Set or acquired corresponding to 10 bits in 30h and 31h. 9876543210 bits Example) 1010101010
Preset control LlRr	4 3 0 0 0	(2) Input/Output bit information → Set or acquired corresponding to 2 bits in 30h and 31h. BA 9876543210 bits Example) 10
Check ALARM lr	5 0 0 0 1	(8) Alarm bit information → Set corresponding to 8 bits in 30h and 31h. 76543210 bits Example) 10101010
ON LINE Check l	5 0 0 0 2	(1) ON/OFF → 30h = OFF LINE, 31h = ON LINE
AUTOSCAN PAUSE Rr	5 0 0 0 6	(1) PAUSE/NON PAUSE → 30h = PAUSE, 31h = NON
Remote camera number r	5 0 0 0 7	(3) Camera number → 1 to 256
Reboot L	5 0 0 0 8	None
Version number acquisition lr	5 0 0 0 9	(1 5) Version number
ALARM LOG read * lr	5 1 ? ? ? ? ? ? 0 to 1 2 7 : Log information ??? = 128 Number of bytes	(1 2) year, month, day, hour,minute, and second '980401121500' (1) Alarm number → 31h to 38h (1 7) Alarm name (3) Number of bytes '100'
CSP-5000 control LR	5 2 0 0 0	(Variable length) CSP-5000/5000E Parameter (in hexadecimal)

***) Issue a 51128 command first to acquire the number of bytes when the ALARM LOG read function is executed. After that, issue a 51000 command, then acquire the arbitary information of 0 to 127.**

3-4-3. Maintenance Command

Control function	**Command**	**Operand (number of bytes) and its contents**
LOOP BACK CALL L	0 0 1 1 7	None
Model name information acquisition	6 0 0 0 0	(2) Model name information
ALARM LOG clear	6 0 0 0 1	None
ALARM LOG write	6 0 0 0 2	None
RS port data output	7 0 0 0 3	(1) RS1/RS2 → 31h = RS1, 32h = RS2
		(4) Data length
		(1) 0dh
		(n) Binary data
MEMORY I/O	7 2 1 0 0	(4) Segment value
		(4) Offset value
		(2) Set data
PORT I/O	7 2 2 0 0	(4) Port address value
		(2) Set data
32K BYTE SYSTEM DATA	7 3 ? ? ?	(4) Binary data length (1025)
		(1) 0dh
		(1024) 1024 binary data
	? ? ? = 000 to 031	(1) One byte obtained when 1024 binary data is XOR'ed sequentially

3-5. COMMAND APPLICATION

A communication example of the command that sets or operates the system parameter (for environment setting) of the PMS-500P/400P or RSE-500/400 using a computer interface is briefly described below.

3-5-1. 11???: Sets the port input mode.

The PMS-500P/400P or RSE-500/400 has general-purpose input/output parallel ports (eight-bit).
Each port is set to the input mode or output mode for every bit and can be used freely. Hardware setting (DIP switch setting on the board) and software setting are required for the port setting. The software can be set using a computer interface. A setting example of the software that sets bit 0 of a PI/O port to the input mode and assigns a PORT#1 comment to this bit is given below.

```
#   L   1 1 0 0 0    0 0 8    0 Tab PORT#1 Cr
    R   Command      Length
    (L: Local, R: Remote, Tab = 09H)
```

When the above command is issued, bit 0 of a PI/O port is set to the input mode by software and a PORT#1 comment is assigned to this bit.

```
#   L   OK   Cr is then returned as a response command.
```

3-5-2. 41000: Reads the input port value.

This command reads the PI/O port value. The current input value is read in the bit set to the input mode, and the former output value is read in the bit set to the output mode.

```
#   l   4 1 0 0 0    0 0 0  Cr
    r
```

When the above command is issued, #L OK Cr is returned as a response command.
After that, # R 41000 008 10101010 Cr can be red. The current input value corresponding to the bit set to the input mode and the former output value of the bit set to the output mode are returned at that time. Data is displayed with the most significant bit (MSB) at the beginning (D7, D6...D0).

3-5-3. 41001: Sets a value to the output port.

This command sets a value to the PI/O port. Only the value corresponding to the bit set to the output mode is valid.

```
#   L   4 1 0 0 1    0 0 8    1 0 1 0 1 0 1 0    Cr
R
```

When the above command is issued, 10101010 is set to the output port (for only the bit set to the output mode).

```
#   L   OK   Cr  is then returned as a response command.
```

3-5-4. 72100: Memory Setting/Acquisition Command

(1) Setting

#	L	7 2 1 0 0	0 1 0	0 0 4 0	0 1 0 0	1 2	Cr
	R	Command	length	Segment	Offset	Data	

Set 12h value to address 0040 : 0100

(2) Acquisition

#	1	7 2 1 0 0	0 0 8	0 0 4 0	0 1 0 0	Cr
	r	Command	length	Segment	Offset	

Acquires the value of address 0040 : 0100

The command below is returned as a response command.

#	R	7 2 1 0 0	0 1 0	0 0 4 0	0 1 0 0	1 2	Cr
		Command	length	Segment	Offset	Data	

3-5-5. 72200: Port Setting/Acquisition Command

(1) Setting

#	L	7 2 2 0 0	0 0 6	E E 0 0	1 2	Cr
	R	Command	length	Segment	Data	

This command outputs 12h data to the port of address EE00.

(2) Acquisition

#	1	7 2 2 0 0	0 0 4	E E 0 0	Cr
	r	Command	length	Segment	Offset

This command acquires the address EE00 value.

The command below is returned as a response command.

#	R	7 2 2 0 0	0 0 6	E E 0 0	1 2	Cr
		Command	length	Segment	Data	

3-5-6. 73???: 32k-byte Data Setting

This command sets and acquires the system data area (F000 segment data).
A packet consists of 1024 + checksum one byte. The checksum is the value obtained when the 1024-byte data division is XOR'ed sequentially. The ??? division in a command is used as an index, and 000 to 031 can be specified.
In other words, the 1024-byte data from index ∗1024 is operated.

(1) Setting

#	L	7 3 0 0 0	0 0 4	1 0 2 5	Cr	(1024-byte binary data)	Checksum
	R	Command	length	Binary data length			

Sets 1024-byte data on start address F000 : 0000

(2) Acquisition

#	1	7 3 0 0 0	0 0 0	Cr
	r	Command	length	

Acquires 1024-byte data from start address F000 : 0000

The command below is returned as a response command.

#	R	7 3 0 0 0	0 0 4	1 0 2 5	Cr	(1024-byte binary data)	Checksum
		Command	length	Binary data length			

3-5-7. 14000: Saves the set 32k-byte data to flush memory.

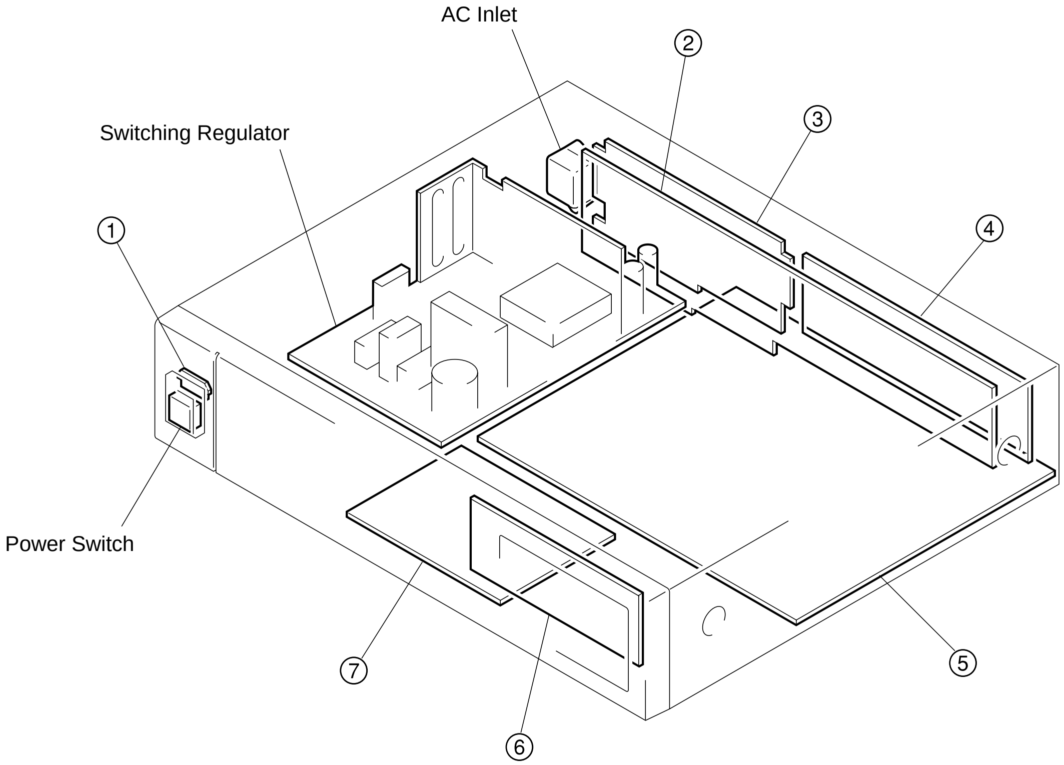
(1) Setting

#	L	1 4 0 0 0	0 0 0	Cr
	R	Command	length	

This command saves the set 32k-byte data to flush memory.

SECTION 4
SERVICE INFORMATION

4-1. LOCATION OF MAIN PARTS



	PMS-500P	PMS-400P	RSE-500	RSE-400	CIRCUIT FUNCTION
①	PE-18 Board				————————
②	IF-588AH Board				VIDEO IN SELECT, PARALLEL I/O
③	CN-1426A Board				ALARM IN CONNECTOR RELAY CONTROL CONNECTOR
④	CN-1308AH Board	CN-1308AM Board	CN-1308AH Board	CN-1308AM Board	VIDEO IN/OUT CONNECTOR AUDIO IN/OUT CONNECTOR
⑤	DPR-86AHP Board	DPR-86AMP Board	DPR-86AHN/ DPR-86AHNR Board	DPR-86AMN Board	ISDN I/F, VIDEO AD/DA VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU
⑥	KY-358 Board				TOUCH KEY BOARD, SIRCS RECEIVE, LED INDICATOR, RINGER
⑦	APR-24 Board				AUDIO AD/DA AUDIO COMPRESS/DECOMPRESS

4-2. REMOVAL OF CABINET

At the first remove the case, and then remove the front panel ass’y and the rear panel block.

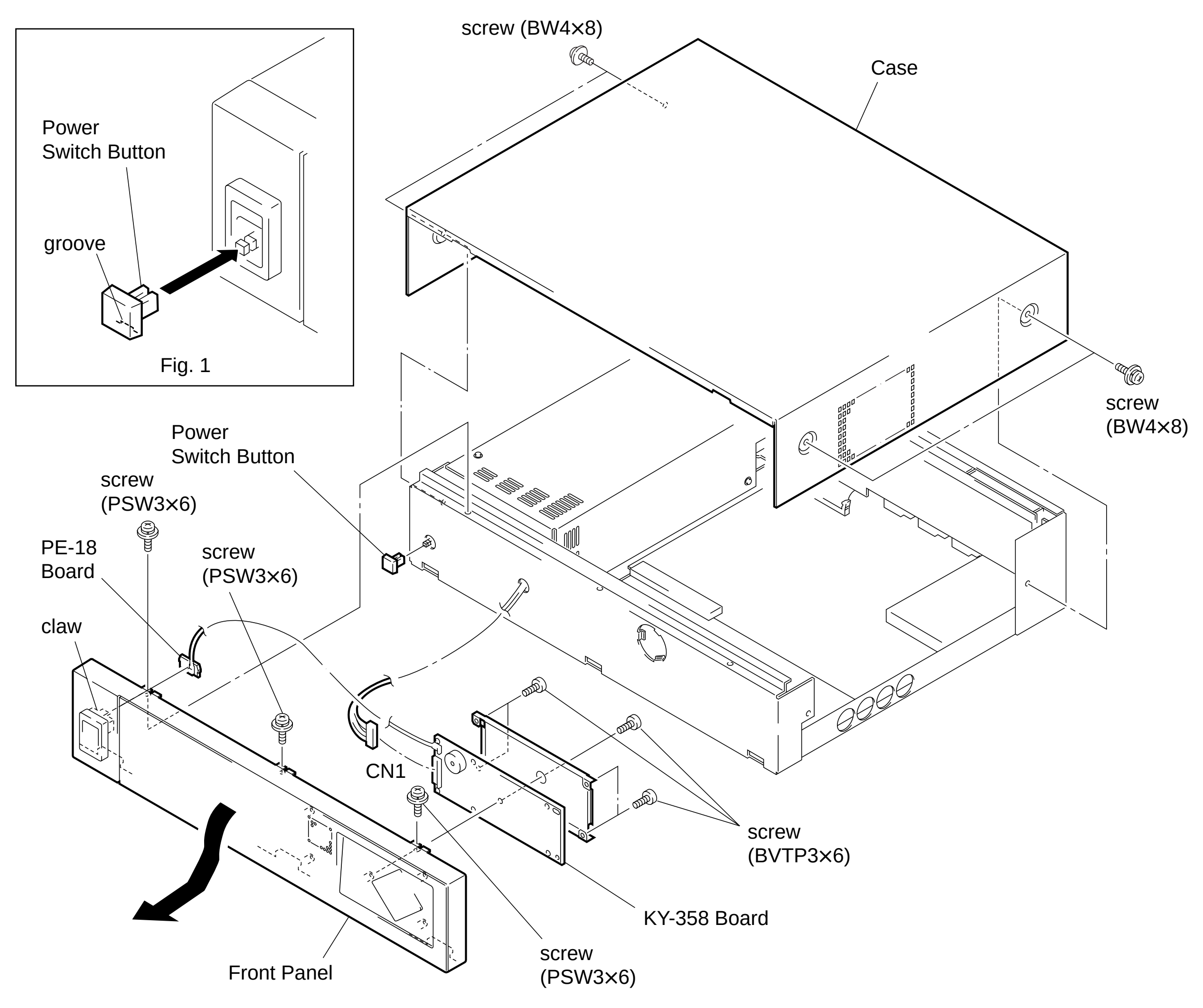
4-2-1. Case

Remove four screws on the case.

4-2-2. Front Panel Ass’y

1. Be sure to remove the power switch button as a first step.
2. Remove three screws, and remove the front panel ass’y to the arrow direction.
3. Take off the claw, and remove PE-18 board.
4. Disconnect the connector CN1 on the KY-358 board.
5. Remove five screws, and remove the KY-358 board.

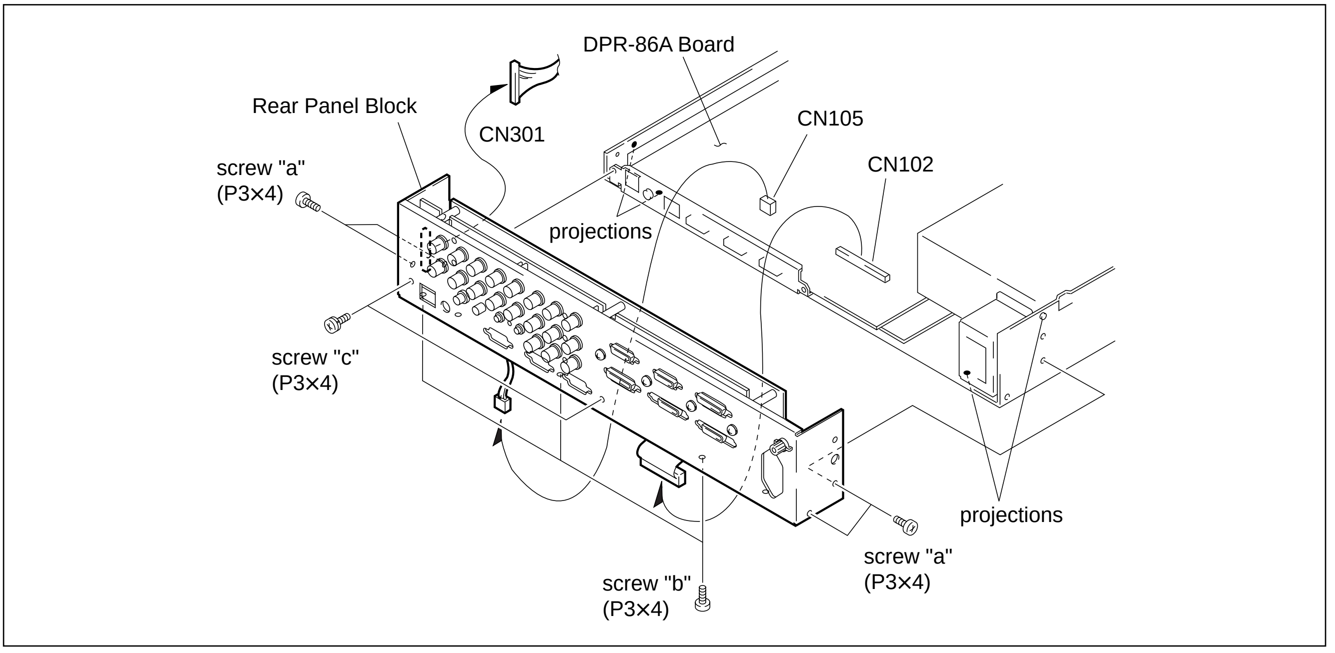
Note on installation :
Install the front panel ass’y after remove the power switch button and then put the power switch button as shown in Fig.1 below.


Power Switch Button
groove
Fig. 1
screw (BW4×8)
Case
screw (BW4×8)
Power Switch Button
screw (PSW3×6)
PE-18 Board
screw (PSW3×6)
claw
CN1
screw (BVTP3×6)
KY-358 Board
Front Panel
screw (PSW3×6)

4-2-3. Rear Panel Block

1. Disconnect two connectors (CN102, CN105) on the DPR-86A board.
2. Disconnect the connector CN301 on the CN-1308A board.
3. Remove four screws “a” of the side and three screws “b” of bottom and two screws “c”.

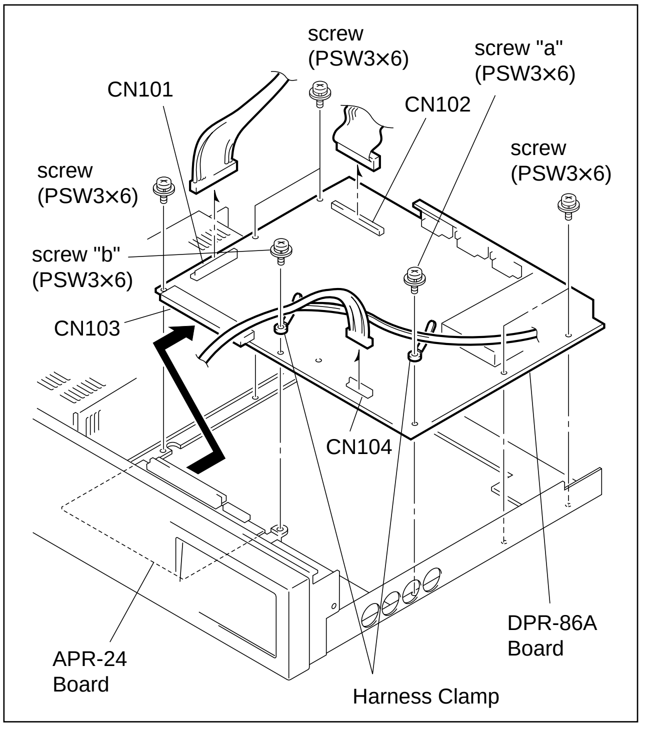
Note on installation:
Fit four projections into the hole of the rear panel block.


DPR-86A Board
Rear Panel Block
CN301
CN105
CN102
screw "a"
(P3×4)
projections
screw "c"
(P3×4)
projections
screw "a"
(P3×4)
screw "b"
(P3×4)

4-2-4. Removal of DPR-86A Board

1. Remove the case and the rear panel block.
(Refer to 4-2-1. Case and 4-2-3. Rear Panel Block.)
2. Disconnect the connector CN102 on the DPR-86A board.
3. Disconnect two connectors (CN101, CN104) on the DPR-86A board, and remove the harness from the harness clamp.
4. Remove seven screws, inclusive of screw “a” and screw “b” on the DPR-86A board.
5. Disconnect the connector CN103 on the DPR-86A board from the APR-24 board to the arrow direction.

Note on installation :
1. **Tighten the screws “a” and “b” with the harness clamp.**
2. **Perform 5-2-2. User Data Backup after DPR-86A board is installed.**

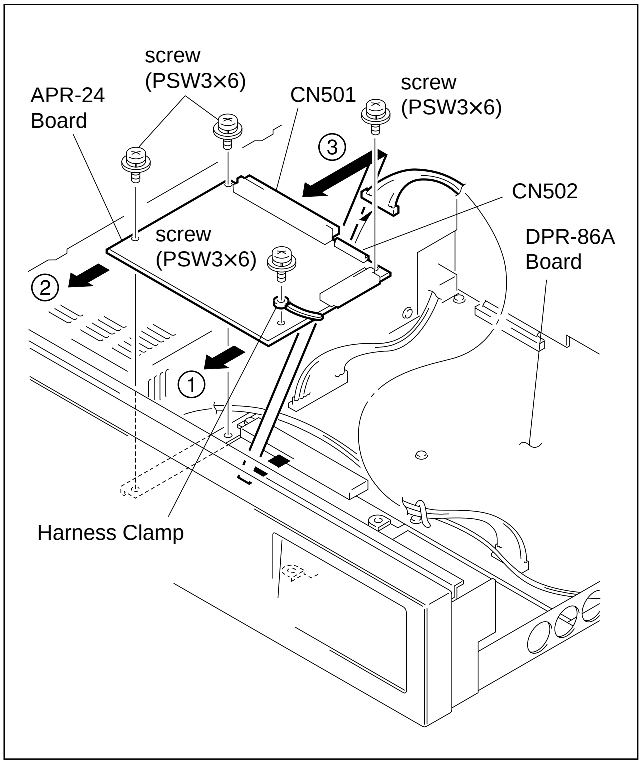

screw
(PSW3×6)
screw "a"
(PSW3×6)
CN101
CN102
screw
(PSW3×6)
screw
(PSW3×6)
screw "b"
(PSW3×6)
CN103
CN104
APR-24
Board
DPR-86A
Board
Harness Clamp

4-2-5. Removal of APR-24 Board

1. Remove the case. (Refer to 4-2-1. Case.)
2. Disconnect the connector CN502 on the APR-24 board, and remove the harness from the harness clamp.
3. Remove four screws (PSW3×6) on the APR-24 board.
4. Move the APR-24 board slightly first in the ① direction, second in the ② direction, and repeat the above steps till the board comes out of the unit completely.
5. Disconnect the connector CN501 on the APR-24 board from the DPR-86A board in the ③ direction.

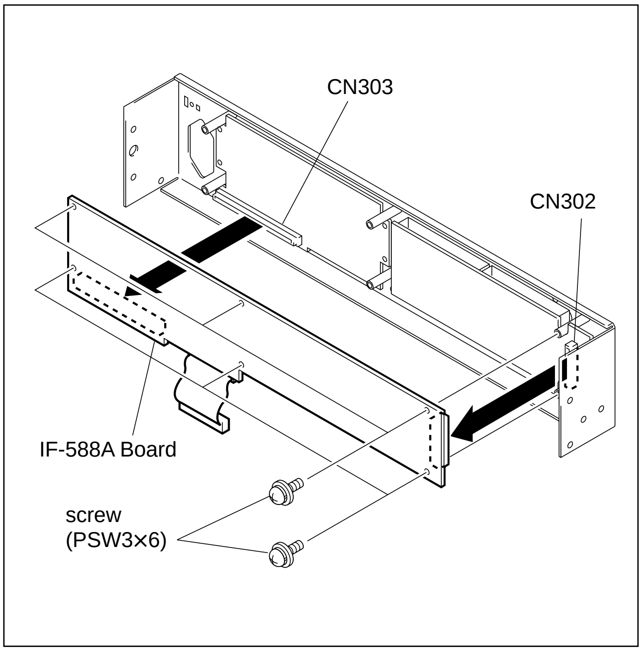
Note on Removal:
Remove the APR-24 board according to the step 4 above to prevent the Resistor, R40 from accidental damege

Note on installation:
Tighten the screw with the harness clamp.


screw
(PSW3×6)
APR-24
Board
CN501
screw
(PSW3×6)
③
CN502
screw
(PSW3×6)
DPR-86A
Board
②
①
Harness Clamp

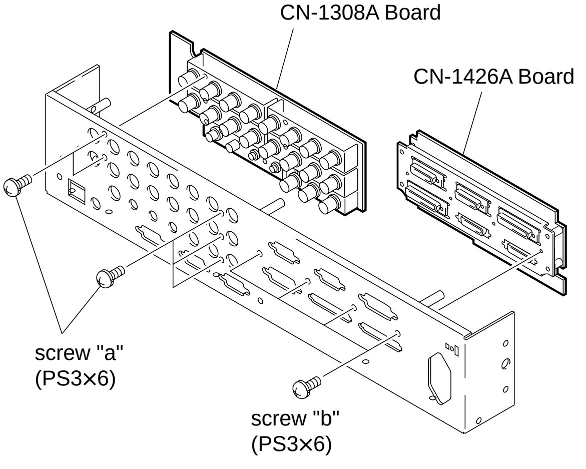
4-2-6. Removal of IF-588A Board

1. Remove the case and the rear panel block.
   (Refer to 4-2-1. Case and 4-2-3. Rear Panel Block.)
2. Remove six screws.
3. Disconnect two connectors (CN302, CN303) and remove the IF-588A board.


CN303
CN302
IF-588A Board
screw
(PSW3×6)

4-2-7. Removal of CN-1308A Board and CN-1426A Board

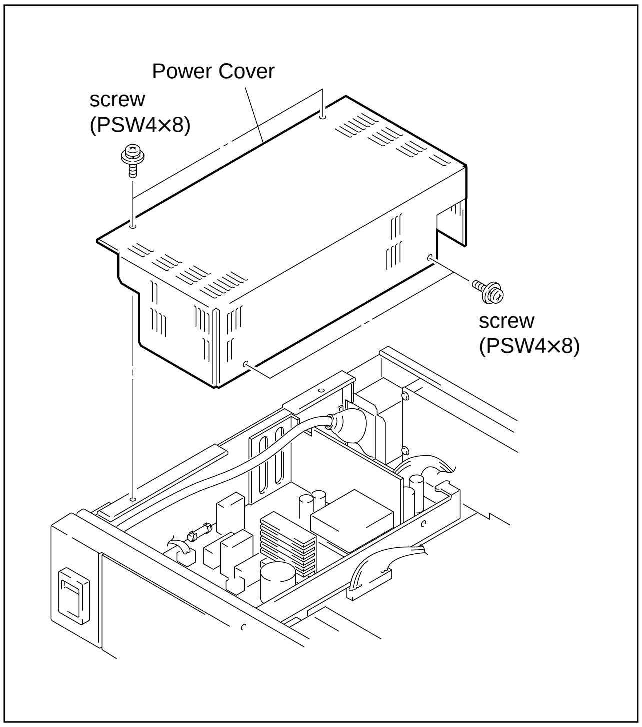
1. Remove the case and the rear panel block.
   (Refer to 4-2-1. Case and 4-2-3. Rear Panel Block.)
2. Remove the IF-588A board.
   (Refer to 4-2-6. Removal of IF-588A board.)
3. Remove five screws “a” and remove the CN-1308A board.
4. Remove four screws “b” and remove the CN-1426A board.


CN-1308A Board
CN-1426A Board
screw "a"
(PS3×6)
screw "b"
(PS3×6)

4-3. REPLACEMENT OF MAIN PARTS

Preparation :

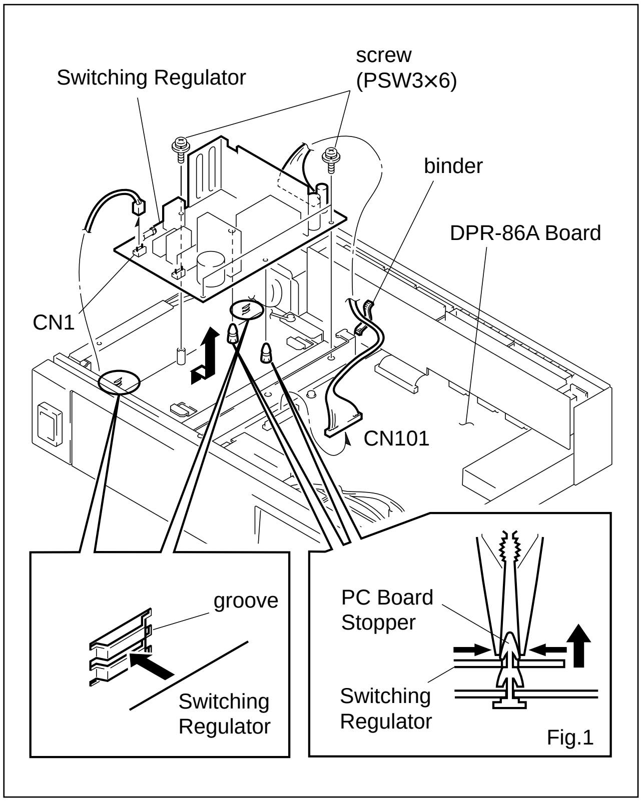
1. Remove the case. (Refer to 4-2-1. Case.)
2. Remove four screws, and remove the power cover.


Power Cover
screw
(PSW4×8)
screw
(PSW4×8)

4-3-1. Replacement of Switching Regulator

1. Disconnect the connector CN101 on the DPR-86A board, and cut the binder which is fixed to the chassis.
2. Disconnect the connector CN1 on the switching regulator.
3. Remove three screws on the switching regulator.
4. Remove the switching regulator from pc board stopper (Fig. 1) and then pull the switching regulator to the arrow direction.

Note on installation :
Put the switching regulator into the groove of the chassis.


Switching Regulator
screw
(PSW3×6)
binder
DPR-86A Board
CN1
CN101
groove
Switching
Regulator
PC Board
Stopper
Switching
Regulator
Fig.1

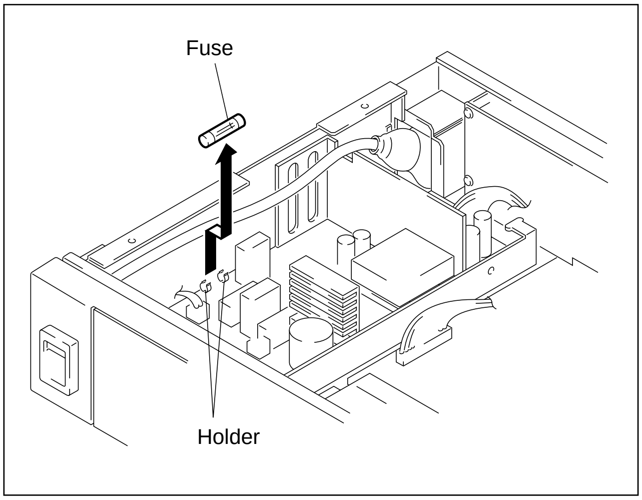
4-3-2. Replacement of the Fuse

Note:
There is a fuse on the switching regulator. When the fuse is blown out, the unit is abnormal. In this case, check the cause of blowout, and replace the fuse.

1. Take out the fuse from holder, and replace the fuse.

   Fuse
   RSE-500/400 (3 A, 125 V)
   Sony Part No. : 1-532-745-11

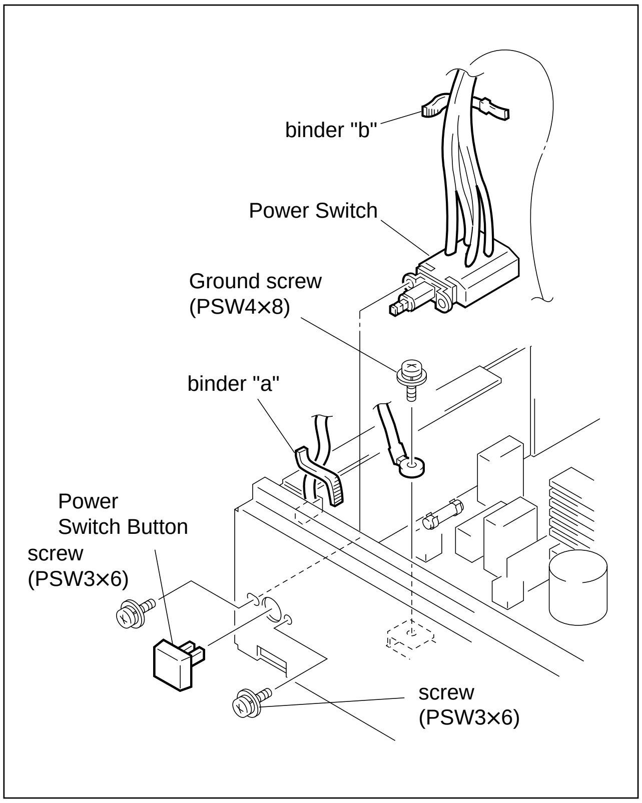
   PMS-500P/400P (T2 A, H250 V)
   Sony Part No. : 1-576-228-31


Fuse
Holder

4-3-3. Replacement of the Power Switch

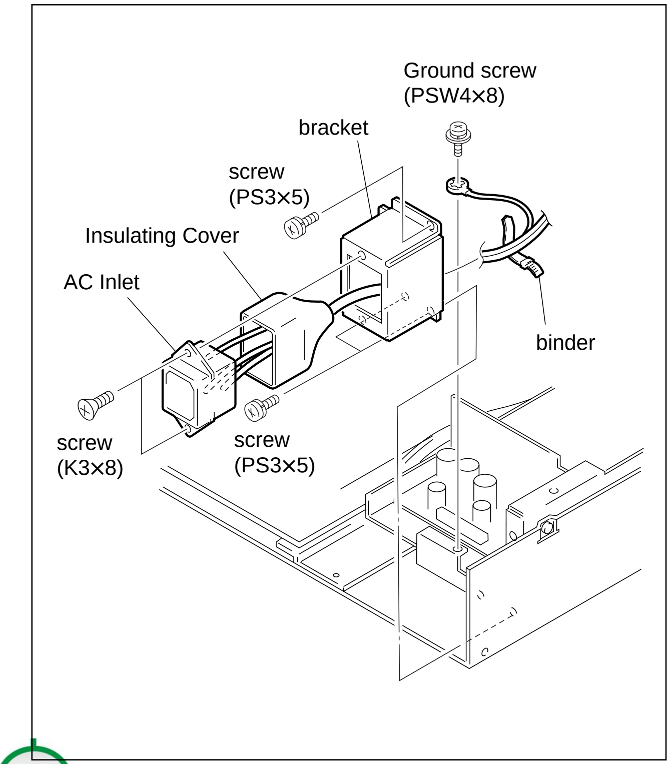
1. Pull out the power switch button.
2. Remove two screws on the front panel.
3. Remove the ground screw.
4. Cut the binder “a” which is fixed to the chassis.
5. Cut the binder “b” of harness on the power switch.
6. Unsolder the power switch.
7. Replace a new one in the reverse procedure of steps 1 through 6.

Notes on installation :
Torque the screws (PSW3×6) to 0.6N (6 kgf).


binder "b"
Power Switch
Ground screw
(PSW4×8)
binder "a"
Power
Switch Button
screw
(PSW3×6)
screw
(PSW3×6)

4-3-4. Replacement of the AC Inlet

1. Remove the case and the rear panel block.
   (Refer to 4-2-1. Case and 4-2-3. Rear Panel Block.)
2. Remove the ground screw.
3. Remove three screws and remove the AC inlet with the bracket.
4. Remove two screws and remove the AC inlet.
5. Cut the binder and move the insulating cover and then unsolder the AC inlet.
6. Replace a new one in the reverse procefure of steps 1 through 5.


Ground screw
(PSW4×8)
bracket
screw
(PS3×5)
Insulating Cover
AC Inlet
binder
screw
(K3×8)
screw
(PS3×5)

4-4. IN/OUT SIGNAL FOR CONNECTOR

VIDEO and AUDIO signal

INPUT

VIDEO IN/EXT VIDEO IN : BNC
Composite video, 1 Vp-p, 75 Ω, Negative synchronization
MIC IN : Round-Type 4 pin connector, Balance input
INPUT impedance : 600 Ω
INPUT level : -60 dBs
HEADPHONE MIC IN : Mini-jack, Unbalance input
INPUT impedance 4.7 kΩ
INPUT level : -60 dBs

INPUT PIN No.

	PMS-500P RSE-500	PMS-400P RSE-400
VIDEO IN	8	8
EXT VIDEO IN	1	1
MIC IN	1	1
HEADPHONE MIC IN	1	1

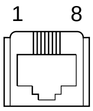
OUTPUT

VIDEO OUT/THROUGH OUT : BNC
Composite video, 1 Vp-p, 75 Ω, Negative synchronization
MONITOR OUT : BNC
Composite video, 1 Vp-p, 75 Ω, Negative synchronization
LINE OUT : RCA pin-jack
OUTPUT impedance 4.7 kΩ
OUTPUT level : typical -10 dBs
HEADPHONE EAR OUT : Mini-jack
OUTPUT impedance 72 Ω
OUTPUT level : typical -10 dBs

OUTPUT PIN No.

	PMS-500P RSE-500	PMS-400P RSE-400
THROUGH OUT	8	8
VIDEO OUT	1	0
MONITOR OUT	1	1
LINE OUT	1	1
HEADPHONE EAR OUT	1	1

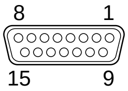
ISDN jack



Modular jack

Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	NC	—	5	RB	Receive–
2	NC	—	6	TB	Transmit–
3	TA	Transmit+	7	NC	—
4	RA	Receive+	8	NC	—

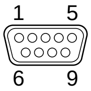
CAMERA SELECT port (female)



D-sub 15-pin port

Pin	Acronym	Meaning
1	DGND	Digital ground
2	VISEL0	Camera select 0
3	VISEL1	Camera select 1
4	VISEL2	Camera select 2
5	VISEL3	Camera select 3
6	VISEL4	Camera select 4
7	VISEL5	Camera select 5
8	VISEL6	Camera select 6
9	VISEL7	Camera select 7
10	ON LINE	On line
11	ALARM OUT	Alarm out
12	DGND	Digital ground
13	DGND	Digital ground
14	RS-485A	RS-485+
15	RS-485B	RS-485–

COMPUTER port (male)



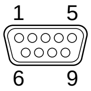
D-sub 9-pin port

Pin	Acronym	Meaning
1	NC (DCD)	(Data carrier detect)
2	RxD	Receive data
3	TxD	Transmit data
4	DTR	Data terminal ready
5	GND	Ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	NC	—

Notes

- Pins 4 and 6 have a short-circuit inside the unit.
- Pins 7 and 8 have a short-circuit inside the unit.

TABLET port (male)



D-sub 9-pin port

When setting to the RS-232C interface

Pin	Acronym	Meaning
1	NC (DCD)	(Data carrier detect)
2	RxD	Receive data
3	TxD	Transmit data
4	DTR	Data terminal ready
5	GND	Ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	NC	—

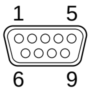
When setting to the RS-422 interface

Pin	Acronym	Meaning
1	NC	—
2	TB	Transmit –
3	RA	Receive +
4	NC	—
5	GND	Ground
6	NC	—
7	TA	Transmit +
8	RB	Receive –
9	NC	—

Note

Pins 4 and 6 have a short-circuit and pins 7 and 8 are used as a flow control signal when setting to the RS-232C interface.

USER DATA port (male)



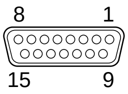
D-sub 9-pin port

Pin	Acronym	Meaning
1	NC (DCD)	(Data carrier detect)
2	RxD	Receive data
3	TxD	Transmit data
4	DTR	Data terminal ready
5	GND	Ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	NC	—

Notes

- This port can be used as either the RS-232C or the RS-485 interface. If this is used as the RS-485 interface, pins 14 and 15 of the CAMERA SELECT port are used for the RS-485 interface.
- Pins 4 and 6 have a short-circuit and pins 7 and 8 are used as a flow control signal when setting to the RS-232C inter-

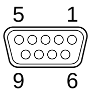
CAMERA CONTROL port (female)



D-sub 15-pin port

Pin	Acronym	Meaning
1	C1	Tilt ↑
2	C2	Tilt ↓
3	C3	Pan →
4	C4	Pan ←
5	C5	Zoom –
6	C6	Zoom +
7	C7	Focus –
8	C8	Focus +
9	C9	Iris –
10	C10	Iris +
11	C11	AUX1
12	C12	AUX2
13	GND	Ground
14	GND	Ground
15	GND	Ground

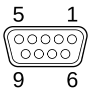
ALARM IN port (female)



D-sub 9-pin port

Pin	Meaning	Pin	Meaning
1	Port 1	6	Port 6
2	Port 2	7	Port 7
3	Port 3	8	Port 8
4	Port 4	9	Ground
5	Port 5	—	—

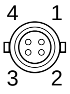
RELAY OUT port (female)



D-sub 9-pin port

Pin	Meaning	Pin	Meaning
1	Port 1	6	Port 6
2	Port 2	7	Port 7
3	Port 3	8	Port 8
4	Port 4	9	Ground
5	Port 5	—	—

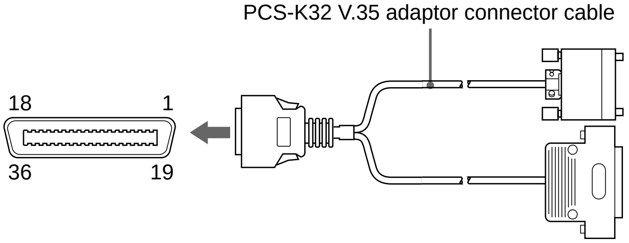
MIC IN port



Round-type 4-pin port

Pin	Acronym	Meaning
1	+5 V	+5 V
2	HOT	Input
3	COLD	Input
4	GND	—

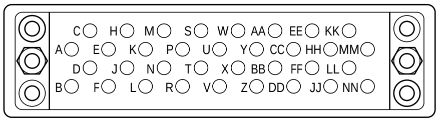
V.35 (A/B) port (female)



Half-pitch 36-pin port

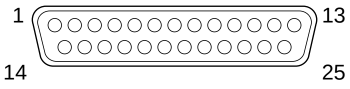
Pin	Acronym	Meaning	Pin	Acronym	Meaning
1	SGND	Signal ground	19	SGND	Signal ground
2	SGND	Signal ground	20	SGND	Signal ground
3	CABLE1	CABLE1	21	CABLE2	CABLE2
4	V35SD+	Send data+	22	V35RI	Ring Indication
5	V35SD–	Send data–	23	V35DR	Data set ready
6	V35RD+	Receive data+	24	366DLO	Data line occupied
7	V35RD–	Receive data–	25	V35CS	Clear to send
8	V35ER	Data terminal ready	26	366ACR	Abandon call &retry
9	V35RS	Request to send	27	366DPR	Digit present
10	V35ST+	Send Timing+	28	366CRQ	Call request
11	V35ST–	Send Timing–	29	366PND	Present next digit
12	V35RT+	Receive Timing+	30	366NB1	Digit signal 1
13	V35RT–	Receive Timing–	31	366NB2	Digit signal 2
14	V35TT+	Transmit Timing+	32	366NB4	Digit signal 4
15	V35TT–	Transmit Timing–	33	366NB8	Digit signal 8
16	SGND	Signal ground	34	SGND	Signal ground
17	SGND	Signal ground	35	SGND	Signal ground
18	CGND	Chassis ground	36	SGND	Signal ground

CCITT V.35 connector (cable side)



Pin	Signal	Description
A	CGND	Chassis ground
B	SGND	Signal ground
C	V35RS	Request to send
D	V35CS	Clear to send
E	V35DR	Data set ready
H	V35ER	DTE ready
J	V35RI	Ring indicator
P	V35SD+	Send data+
R	V35RD+	Receive data+
S	V35SD–	Send data–
T	V35RD–	Receive data–
U	V35TT+	Transmit timing+
V	V35RT+	Receive timing+
W	V35TT–	Transmit timing–
X	V35RT–	Receive timing–
Y	V35ST+	Send timing+
AA	V35ST–	Send timing–

D-sub 25-pin connector (cable side)



Pin	Signal	Description
1	SGND	Signal ground
2	366DPR	Digit present
3	366ACR	Abandon call & retry
4	366CRQ	Call request
5	366PND	Present next digit
7	SGND	Signal ground
14	366NB1	Digit signal 1
15	366NB2	Digit signal 2
16	366NB4	Digit signal 4
17	366NB8	Digit signal 8
18	SGND	Signal ground
19	SGND	Signal ground
22	366DLO	Data line occupied

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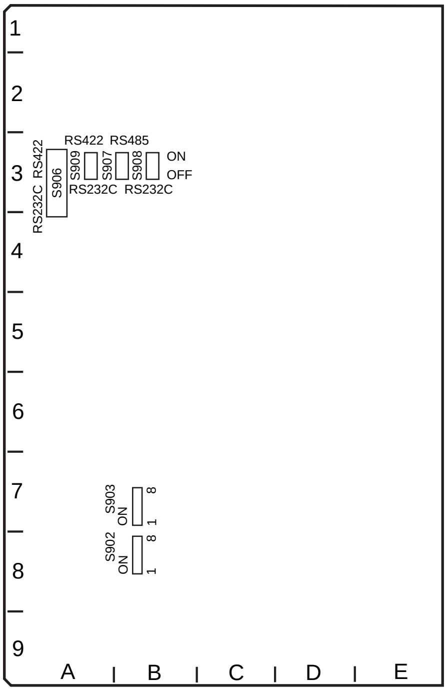
The video transmitter (RSE-500/400) or the monitoring codec (PMS-500P/400P) (called this unit hereafter) is connected to a video camera, a monitor, and other equipment and is used as a system.
The DIP switch setting on each board of this unit and the menu setting must be changed before each system is used.
This section describes the setting of DIP switches, the cautions during setting, and the setting at the factory.

4-5. SWITCH SETTING

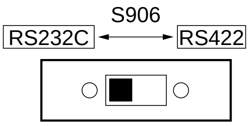
4-5-1. DPR-86A Board

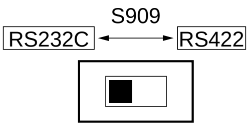


Note: **Each setting can be selected by setting the DIP switches and menu. Be sure to set both the DIP switches and menu.**

- S906 and S909: RS-232C/RS422 selector switches

The communication mode at the port on the rear panel can be selected using these switches.





Switch setting

To use the RS-232C mode, set S906 and S909 to RS-232C. To use the RS-422 mode, set them to RS-422. (Set both S906 and S909 to the same mode position.)

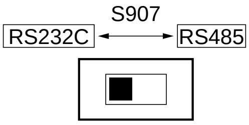
Menu setting

1. Select the setting menu.
2. Select “25. RS-232C 1”.
3. Select an arbitrary interface.

(For more details of the menu setting, refer to the “Setting the TABLET Port” in Section 1.)

- S907: RS-232C/RS-485 selector switch

Use the USER DATA port on the rear panel for communication when RS-232C is selected. Use the RS-485 port for communication when RS-485 is selected.



Switch setting

To use the RS-232C mode, set S907 to RS-232C. To use the RS-485 mode, set it to RS-485.

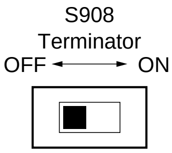
Menu setting

1. Select the environment setting.
2. Select “26. RS-232C 2”.
3. Select an arbitrary interface.

(For more details of the menu setting, refer to the “Setting the USER DATA Port” in Section 1.)

- S908: Terminator ON/OFF selector switch for RS-485

Set S908 to ON when the RS-485 mode is used and the unit is connected for the last connection.



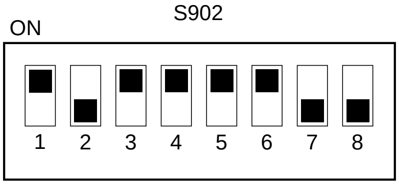
Factory setting

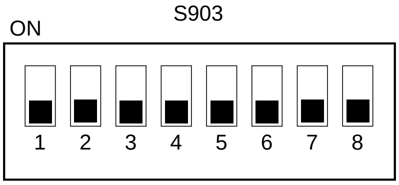
Switch No.	Factory setting
S906	RS-232C
S907	RS-232C
S908	OFF
S909	RS-232C

- S902 and S903

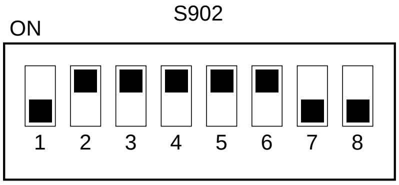
Note: **Do not use S902 and S903 (eight-segment DIP switches) because they are used for factory setting. If you have changed the setting of these switches by mistake, return them to the setting at the factory.**

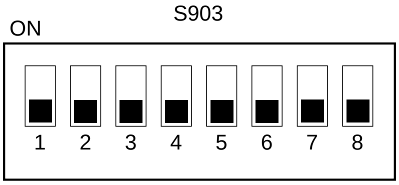
- PMS-500P


S902
ON
1 2 3 4 5 6 7 8

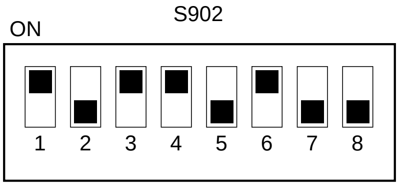

S903
ON
1 2 3 4 5 6 7 8

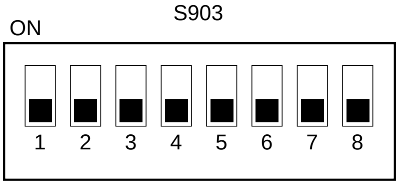
- RSE-500


S902
ON
1 2 3 4 5 6 7 8

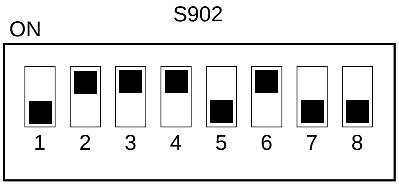

S903
ON
1 2 3 4 5 6 7 8

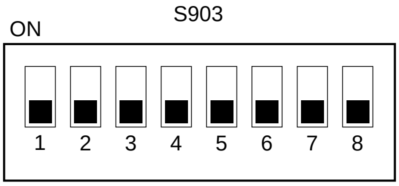
- PMS-400P


S902
ON
1 2 3 4 5 6 7 8

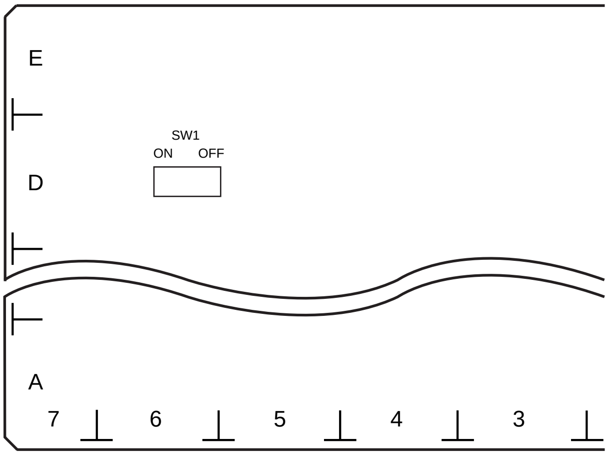

S903
ON
1 2 3 4 5 6 7 8

- RSE-400

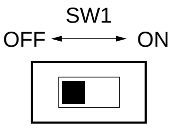

S902
ON
1 2 3 4 5 6 7 8


S903
ON
1 2 3 4 5 6 7 8

4-5-2. APR-24 Board

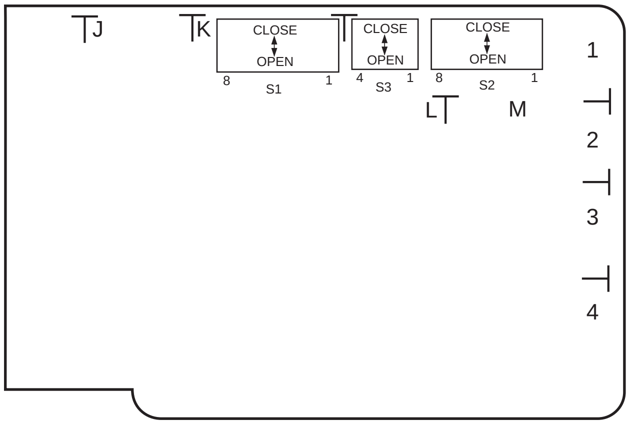

E
SW1
ON OFF
D
A
7
6
5
4
3

- SW1:ON/OFF selector switch of audio switch function
  Usually, this switch is set to OFF.
  To cancel the audio switch function, set this switch to ON (during a loop-back check).



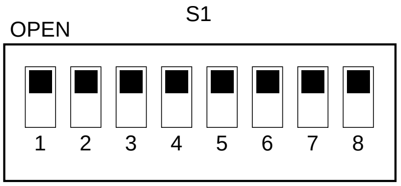
Factory setting : OFF

4-5-3. IF-588A Board


J
K
CLOSE
OPEN
8
S1
1
CLOSE
OPEN
4
S3
1
CLOSE
OPEN
8
S2
1
L
M
1
2
3
4

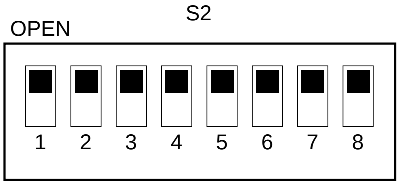
S1 (8-segment DIP switch) : RELAY OUT input/output selector switch

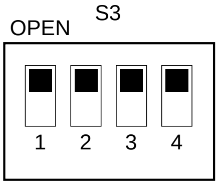
To use the relay output in the output mode, set S1 to OFF (OPEN). To use the relay output in the input mode, set it to ON (CLOSE).


OPEN
S1
1 2 3 4 5 6 7 8

- S2 (8-segment DIP switch) and S3 (4-segment DIP switch): CAMERA CONTROL input/output selector switches

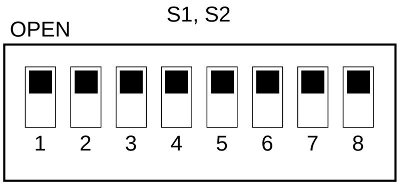
To use the camera control in the output mode, set S2 and S3 to OFF (OPEN). To use the camera control in the input mode, set them to ON (CLOSE). (Set both S2 and S3 to the same mode position.)

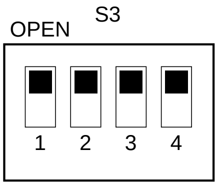

OPEN
S2
1 2 3 4 5 6 7 8


OPEN
S3
1 2 3 4

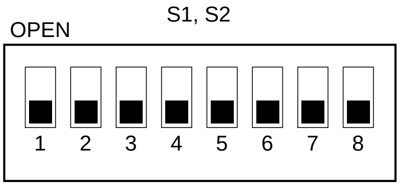
Factory setting

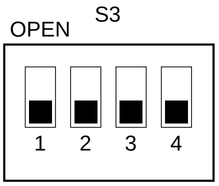
- PMS-500P, RSE-500


OPEN
S1, S2
1 2 3 4 5 6 7 8


OPEN
S3
1 2 3 4

- PMS-400P, RSE-400


OPEN
S1, S2
1 2 3 4 5 6 7 8


OPEN
S3
1 2 3 4

4-5-4. Menu Setting at the Factory

Item	Factory setting	Memo
ID NAME	Blank	
SITE NAME	Blank	
TELEPHON#	Blank	
PASSWORD	Blank	
LIST (NORMAL)	Blank	
LIST (ALARM)	Blank	
LIST (RECEIVE)	Blank	
CAMERA	1	
CAMEAR AUTO SCAN	0	
TIME OUT1	0	
TIME OUT2	0	
AUDIO MIC LEVEL	ON HIGH-25 LOW-16	
AUDIO-HEADSET	LOW	
MIC	LOW	
RINGER	ON	
KEY SOUND	ON	
PICTURE MODE *1	NORMAL	
PinP *1	OFF	
CALENDAR	Undefined	
MENU	ON	
ALARM IN	Blank	
PARALLEL I/O	INPUT mode *1 OUTPUT mode *2	
CAMERA CONTROL	INPUT mode *1 OUTPUT mode *2	
COMPUTER	RS-232C 9600, 8, 1, N	
RS-232C 1	RS-232C 9600, 8, 1, N	
RS-232C 2	RS-232C 9600, 8, 1, N	
VERSION	Version No.	
MAINTENANCE	OFF	
RECEIVE CHECK	OFF	
LDN CHECK	ON	
DIAG	—	
ANSWERING MODE	Auto	
COMMUNICATION MODE	64k DUAL	
BRI MISC	—	

*1 For PMS-500P, RSE-500
*2 For PMS-400P, RSE-400

4-6. ALIGNMENT FIXTURE

- For PMS-500P/400P

Ref. No	Part No.	Description	For Use
*1 ①	J-6431-030-A	ROM Tool Board, Disk and Download ROM (*2)	Diagnosis/downloading
②	J-6389-560-A	Cable Kit	Extention board for IF-588A board
*2 ③	J-6431-040-A	Download ROM	Downloading
④	J-6431-050-A	Factory Set Program	Downloading of setup data

- For RSE-500/400

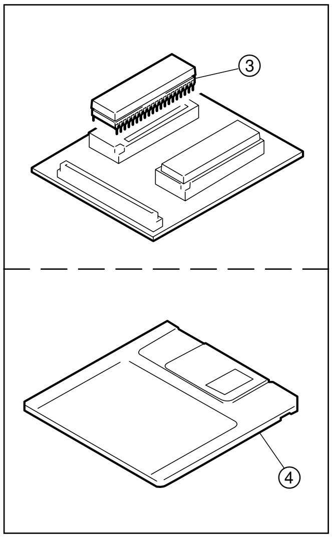
Ref. No	Part No.	Description	For Use
*1 ①	J-6431-740-A	ROM Tool Board, Disk and Download ROM (*2)	Diagnosis/downloading
②	J-6389-560-A	Cable Kit	Extention board for IF-588A board
*2 ③	J-6431-720-A	Download ROM	Downloading

Note

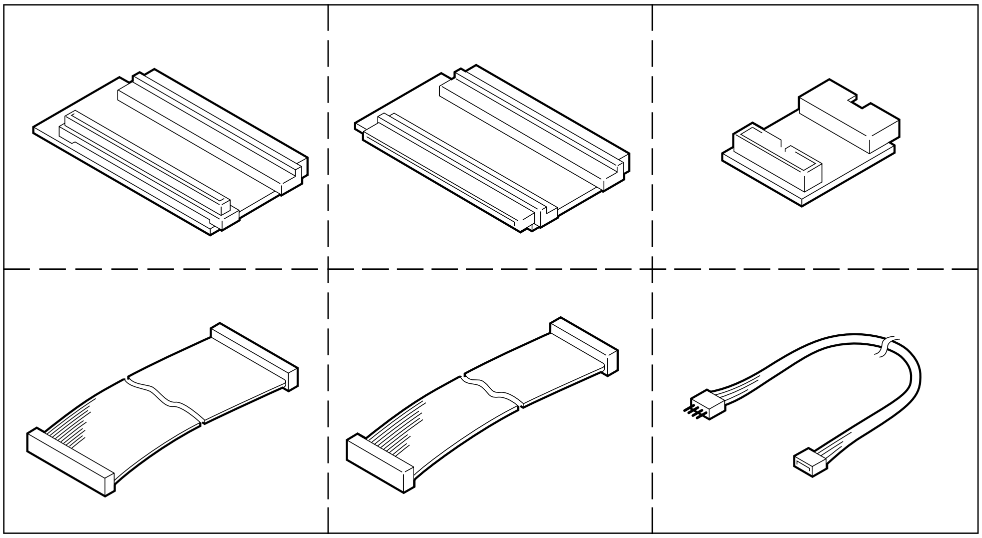
***1 : This fixture includes the Download ROM (*2).**

***2 : When this “Download ROM” (*2) is only upgraded, this one is required.**

①



②



4-7. REPLACEMENT OF PARTS

4-7-1. Notes on Spare Parts

(1) Safety Related Components Warning

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

(2) Standardization of Parts

Spare parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to “accommodating the improved parts and/or engineering changes” or “standardization of genuine parts”.
This manual's exploded views and electrical spare parts list are indicating the part numbers of “the standardized genuine parts at present”.

(3) Stock of Parts

Parts marked with “o” SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with “o” will be processed, but allow for additional delivery time.

(4) Units for Capacitors, Inductors and Resistors

The following units are assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors : µF
Inductors : µH
Resistors : Ω

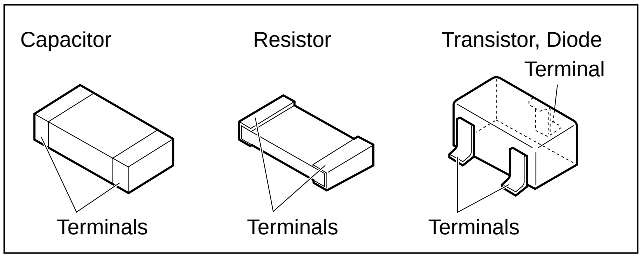
4-7-2. Replacement of Chip Parts

Required Tools

Soldering iron : 20 W
If possible, use a soldering-iron tip heatcontroller set to 270 ± 10 °C.
Braided wire : Solder Taul or equivalent
Sony part No. 7-641-300-81
Solder : 0.6 mm dia. is recommended.
Tweezers

Soldering Conditions

Soldering iron temperature : 270 ± 10 °C
Soldering time : Less than 2 seconds per pin



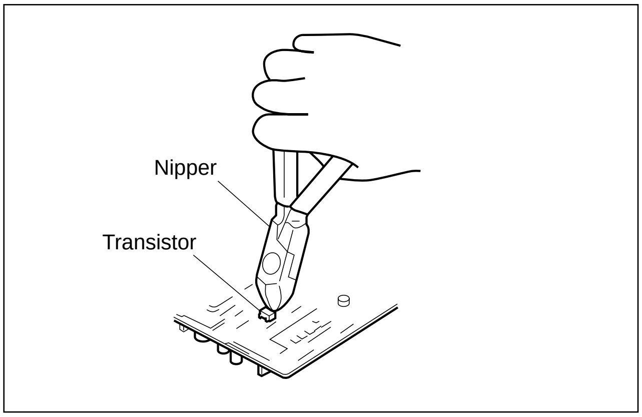
Replacement of Resistor and Capacitor

1. Place the soldering-iron tip onto the chip part and heat it up until the solder is melted. When the solder is melted, slide the chip part aside.
2. Make sure that there is no pattern peeling, damage and/or bridge around the desoldering position.
3. After removing the chip part, presolder the area, in which the new chip part is to be placed, with a thin layer of solder.
4. Place new chip part in the desired position and solder both ends.

NOTE Do not use a chip part again once it has been removed.

Replacement of Transistors and Diodes

1. Cut the terminals of the chip part with nippers.
2. Remove the cut leads with soldering iron as above.
3. Make sure that there is no pattern peeling, damage and/or bridge around the desoldering positions.
4. After removing the chip part, presolder the area, in which the new chip part is to be placed, with a thin layer of solder.
5. Place new chip part in the desired position and solder the terminals.

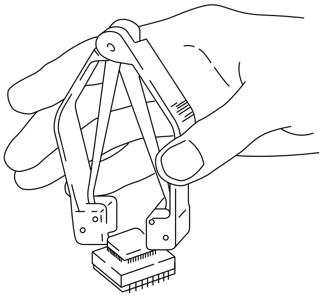


Replacement of ICs

1. Using the braided wire, “SOLDER TAUL” (Sony Part No. 7-641-300-81), remove the solder around the pins of the IC-chip to be removed.
2. While heating up the pins, remove the pins one by one using sharp-pointed tweezers.
3. Make sure that there is no pattern peeling, damage and/ or bridge around the desoldering position.
4. After removing the chip part, presolder the area, in which the new chip part is to be placed, with a thin layer of solder.
5. Place new chip part in the desired position and solder the pins.

4-7-3. Removal of PLCC IC (IC701/DPR-86A Board)

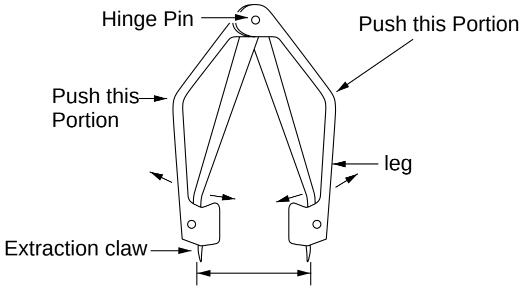
PLCC socket Extraction Tool
(Sony Part No. J-6035-070-A)
This extraction tool is useful for extracting the IC(PLCC type) inserted into an IC socket, and fits all sizes of ICs from 20 pins through 124 pins.



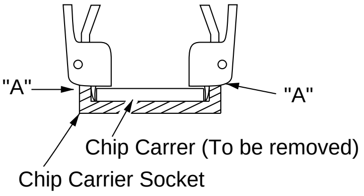
NOTE: Do not try to pull chip carrier out of socket and let the tool action pull it out. Do not squeeze harder than necessary, only enough that the tool action occurs.

<How to use the Extraction Tool>

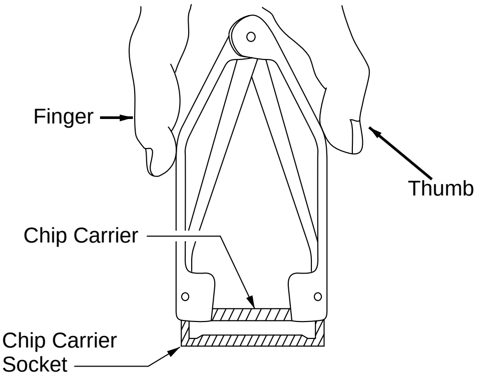
1. Spread or compress the tool legs so the tongs will fit into the slots of the chip carrier socket.



2. Insert the tool tongs into the slots of the carrier socket. Push fully in so that the tool butts on the socket at “A”.



3. Place the thumb and the first and second finger on the ribbed area of the tool. Maintain a small downwartd force to keep the tool butted on the socket.
   Squeeze the thumb and finger together so that the tool legs tend to straighten. This action will draw the chip carrier out of the socket and grip it within the tool legs. Maintain the squeezing action so as to hold the chip in the tool, hold the tool over your other hand and relax the squeeze. The chip will fall out of the tool and into your hand.



SECTION 5
SELF-DIAGNOSIS

The PMS-500P/400P or RSE-500/400 has two self-diagnosis functions for the end user and service that are used when a trouble occurs. The self-diagnosis for the end user is first carried out when a trouble occurs in the system. As a result, if a trouble has occurred in the PMS-500P/400P or RSE-500/400, the component level is diagnosed for each board using a self-diagnosis function for the service.

5-1.   SELF-DIAGNOSIS FOR END USER

The PMS-500P/400P, RSE-500/400 is designed so that it is used as a system through connection with a video camera, video monitor, microphone, and audio amplifier.
Using this function, the user can judge easily that a trouble occurred in the PMS-500P/400P or RSE-500/400, or other equipment when it was generated. For more details, refer to Section 1, “Operating Instructions”.

5-2.   SELF-DIAGNOSIS FOR SERVICE

In the self-diagnosis for component repair (hardware confirmation), attach the dedicated ROM tool board for self-diagnosis to connector CN103 on the DPR-86A board (remove the APR-24 board before attaching the ROM tool board) and connect a personal computer with RS-232C (called a personal computer hereafter) to the COMPUTER terminal of the PMS-500P/400P, RSE-500/400. In this case, use a terminal soft like a HYPER TERMINAL, for example in Windows 95. (Set the communication parameters to 9600 bps, 8 bits, 1 stop bit, and non-parity.)
The RS-232C port of the PMS-500P/400P, RSE-500/400 conforms to the DTE specification, so a cross cable (null modem) is used as the RS-232C cable. This self-diagnosis software operates in the interactive mode.

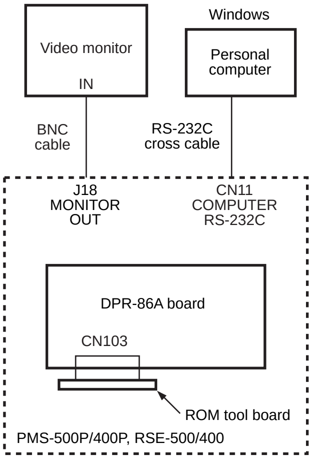
• Menu mode

The self-diagnosis software sends a menu to the RS-232C port. Therefore, the self-diagnosis menu is displayed on the screen of the connected personal computer. The self-diagnosis is executed in the interactive mode by selecting the item number to be diagnosed from this menu. The result (normal or abnormal) is sent back to the RS-232C port and displayed on the screen of the personal computer.

5-2-1. Connection

[Equipment required]
- ROM tool board, floppy disk and download ROM (RSE-500/400 : J-6431-740-A)
- ROM tool board, floppy disk and download ROM (PMS-500P/400P : J-6431-030-A)
- Personal computer with RS-232C (Windows)
- Video monitor
- RS-232C cross cable
- BNC cable

[Connection]



5-2-2. User Data Backup

The user data stored in IC917 is erased when the flush memory check in diagnostic menu No.02 is executed. Therefore, be sure to back up the user data according to the procedure below before executing the self-diagnosis for service. The user data is also erased when a program is downloaded using a ROM tool board. Back up the user data in the procedure below as required.

How to back up the user data

Set the personal computer with the WINDOWS.

1. Insert a floppy disk supplied for the ROM tool board into a personal computer.
   Change the current drive to the drive into which the floppy disk is inserted.
2. Hit the FSET, perform the back up the user data according to the menu on the monitor screen.

When no user data can be backed up

Write initialization data if an error occurs when the user data is backed up or if no user data can be backed up because of the unit state.
The initialization data is contained in a floppy disk supplied for the ROM tool board.

How to write data (backup data or initialization data) again in IC917

Write the backup data or initialization data in IC917 according to the procedure below after the flush memory check in self-diagnostic menu No.02 for service is executed.
The way to write the backup data or initialization data is the same in the procedure.

1. Remove the APR-24 board. (Refer to section 4-2-5.)
2. Set the switch on the ROM tool board to DOWNLOAD and attach the ROM tool board to connector CN103 on the DPR-86A board.
3. Insert a floppy disk supplied for the ROM tool board into a personal computer.
   Change the current drive to the drive into which the floppy disk is inserted.
4. Turn on the power of this unit.
   A program is downloaded (for approximately 20 seconds.)
   The STANDBY lamp on the front panel blinks during downloading.
   After the download is completed, a dial list is displayed on the monitor screen.
5. Hit the “FSET” and set the data according to the menu on the monitor screen.
6. Turn off the power of this unit, remove the ROM tool board, and mount the APR-24 board.
7. Turn on the power. Confirm that the dial list screen is displayed on the monitor.

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5-2-3. Operation

[Preparation]

1. Remove the APR-24 board. (Refer to section 4-2-5.)
2. Set the switch on the ROM tool board to DIAG and attach the ROM tool board to connector CN103 on the DPR-86A board.

Note: Confirm that the switch on the ROM tool board is set to DIAG. If the power of this unit is turned on with the switch set to DOWNLOAD, the data in ROM is downloaded and the user data stored in IC917 is erased. If the data in ROM has been downloaded by mistake, do not turn off the power during downloading because the IC may be damaged.

3. Execute the communication soft on the personal computer (communication parameter 9600, 8, 1, N) and press the return key.
4. Message “CMD Ready:” is then displayed. Key in “0” and press the return key to display the self-diagnostic menu.
5. Turn on the power of this unit.

After the power of this unit is turned on, the CPU (V50) on the DPR-86A board initializes the peripheral devices in the sequence below.

1 V50 CPU register
2 PI/O (UPD71055) on DPR-86A board
3 PI/O #1 (IC8) on IF-588A board
4 PI/O #2 (IC3) on IF-588A board
5 Real-time clock IC
6 SIO IC (MB89371)
7 VCP
8 OSDC IC
9 SIRCS decoder IC

The LEDs (D902 to D909) on the DPR-86A board display the status in binary while each initialization is executed. After SIRCS IC is initialized, “9” is displayed continuously.

After that, CPU checks the work RAM and confirms that the self-diagnostic software can be activated. At this point of time, the self-diagnostic software does not use the work RAM. If abnormality is found during a work RAM check, an “Sram Check Error” message is output to the RS-232C port. If no abnormality is found, a “CMD Ready:” message is output.

Key in “0” and press the return key to enter the menu mode.

Each diagnosis can be executed by keying in the menu No.

5-2-4. Self-Diagnostic Items in Menu Mode

Diagnostic item		Description	Remedy and device
0	Menu mode start	The menu mode is entered when “0” and “CR” (carriage return) are entered. The subsequent self-diagnosis result is displayed as described below with partial exception. Normal: OK Abnormal: NG	
1	CPU WORK RAM CHECK	The work RAM (SRAM) on the DPR-86A board is checked for the write/read operation.	
2	Flash memory check	Sector erase: End confirmation Data write/read: Comparison check	IC917 The contents of memory are all cleared when a diagnosis is executed. Therefore, store data in a personal computer as required. Data must be written in IC917 after a flash memory check. (Refer to section 6-2-3.)
3	Unused.		
4	V50 TCU (Timer counter unit)	Only TCT0 can be checked.	
5	Unused.		
6	Unused.		
7	RS-232C loopback confirmation	A loopback connector is connected to the RS-232C channel #1 (TABLET terminal) or #2 (USER DATA terminal) port on the connector panel you wish to diagnose for a check.	IC934, IC941, and IC944 RS-232C/422 and RS-232C/485 are selected by the setting of RS-232C. RS-422 and RS-485 can be substituted by the diagnosis of RS-232C except a line driver and receiver.
8	ISDN I/F operation confirmation	Register write/read check	IC703, IC705, IC706
9	TDM-ASIC operation confirmation	Register write/read check	IC616

Diagnostic item		Description	Remedy and device
10	Front panel key code confirmation	Key data is displayed in binary when each key on the front panel is pressed. Enter arbitrary keys in a personal computer to initiate the self-diagnosis. ↑ 01111011(7Bh) → 01100111(67H) ↓ 01110111(77h) ← 01101111(6Fh) Enter 01111111(7Fh)	
11	VCP SRAM write/read check	SRAM write SRAM read: Verify check	IC617, IC618, IC619, IC620
12	Alarm contact input confirmation	Addresses are displayed when an error occurs. The alarm input is displayed on the screen of a personal computer in binary. Enter arbitrary keys in a personal computer to terminate the self-diagnosis.	IC10, IC17, and IC18 The alarm is turned on by strapping the ALARM IN terminal.
13	Unused.		
14	Unused.		
15	VIDEO INPUT SELECT	The input channel is selected using a parameter.	IC3, IC16, and IC17 The camera number is obtained when 1 is added to the 8-bit binary value. The state in which the camera select output is turned on and off can be confirmed in the resistance measurement range of a tester.
16	Unused.		
17	Real-time clock operation confirmation	Time read update check	IC922
18	Camera control port output	The data designated in binary is output to each 10-output port, then terminated.	IC3, IC14, and IC15 Set switches S2 and S3 to OFF (OPEN). The CAMERA CONTROL terminal can be confirmed in the resistance measurement range of a tester.
19	Camera control port input	The camera control port input is displayed on the screen of a personal computer in binary. Enter arbitrary keys in a personal computer to terminate the self-diagnosis.	IC3, IC16, and IC17 Set switches S2 and S3 to ON (CLOSE). The camera is turned on by strapping the CAMERA CONTROL terminal.

Diagnostic item		Description	Remedy and device
20	Relay contact output	The data designated in binary is output to each eight-output port, then terminated.	IC8 and IC12 PIO output check Set switch S1 to OFF (OPEN). The RELAY OUT terminal can be confirmed in the resistance measurement range of a tester.
21	Relay contact input	The relay contact input is displayed on the screen of a personal computer in binary. Enter arbitrary keys in a personal computer to terminate the self-diagnosis.	C8, IC9, and IC13 PIO input check Set switch S1 to ON (CLOSE). The relay is turned on by strapping the RELAY OUT terminal (RELAY IN terminal in this case).
22	OSDC (On-Screen Display Controller)	The character and superimpose display modes are selected. 0: Character display mode 1: Superimpose display mode (2: VCP activation)	IC53, IC54, IC937
23	VCP test signal output	3: Outputs a color-bar signal from VCP. 23: Returns and outputs a VCP input signal. **Note: To execute diagnostic item 23, execute "22-2: VCP activation" in advance.**	IC626 and IC957 A color-bar signal is also used for the adjustment of a D/A converter block.

SECTION 6
ELECTRICAL ALIGNMENT

6-1. EQUIPMENT REQUIRED FOR ELECTRICAL ADJUSTMENT

It is recommended to use the measurement equipment and signal generator or the equivalent described below.

Measurement Equipment

- Oscilloscope (Tektronix 2245B/150 MHz or more)
- Waveform monitor/vectorscope (Tektronix 1750A) (For RSE-500/400)
- Waveform monitor/vectorscope (Tektronix 1751A) (For PMS-500P/400P)
- Audio level meter (Hulette Packard 3400A)
- Frequency counter (Advantest TR5821A)

Signal Generator

- TV signal generator (Tektronix TSG-130/A) (For RSE-500/400)
- TV signal generator (Tektronix TSG-131/A) (For PMS-500P/400P)
- Audio signal generator (Hulette Packard 8904A)

Tool

- ROM tool board (Sony parts No. J-6431-030-A) (For PMS-500P/400P)
- ROM tool board (Sony parts No. J-6431-740-A) (For RSE-500/400)
- BNC cable
- RS-232C cross cable
- ISDN cable
- Mini-plug cable

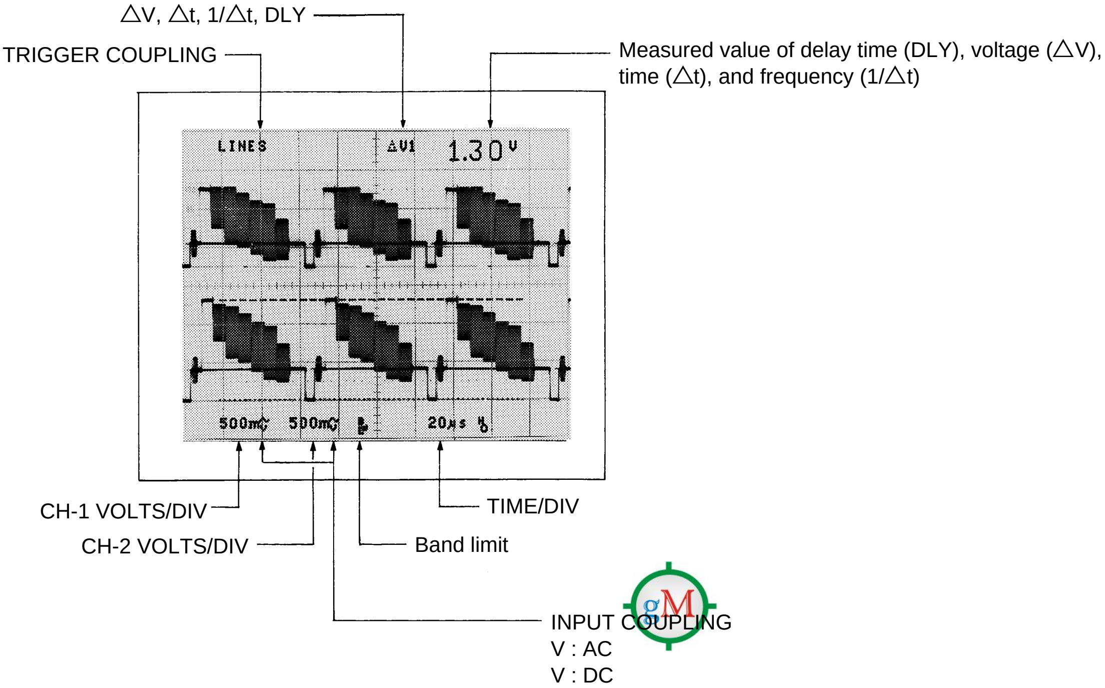
Others

- Pseudo exchange
- Personal computer with RS-232C (IBM-PC, etc.)
- Adjusted PMS-500P/400P, RSE-500/400

6-2. SETTING OF THE EQUIPMENT USED DURING ELECTRICAL ADJUSTMENT

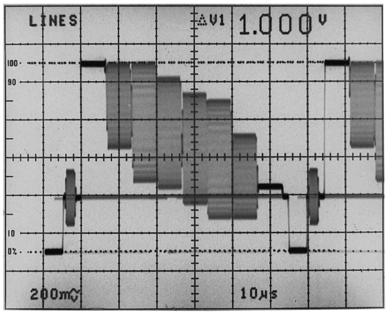
Oscilloscope

- When a waveform photograph is used for the waveform display, the setting conditions are displayed as shown below.


△V, △t, 1/△t, DLY
TRIGGER COUPLING
Measured value of delay time (DLY), voltage (△V), time (△t), and frequency (1/△t)
LINES
ΔV1
1.30V
500mV
500mV
20µs
CH-1 VOLTS/DIV
CH-2 VOLTS/DIV
TIME/DIV
Band limit
INPUT COUPLING
V : AC
V : DC

6-3. TEST SIGNAL

75% color-bar signal



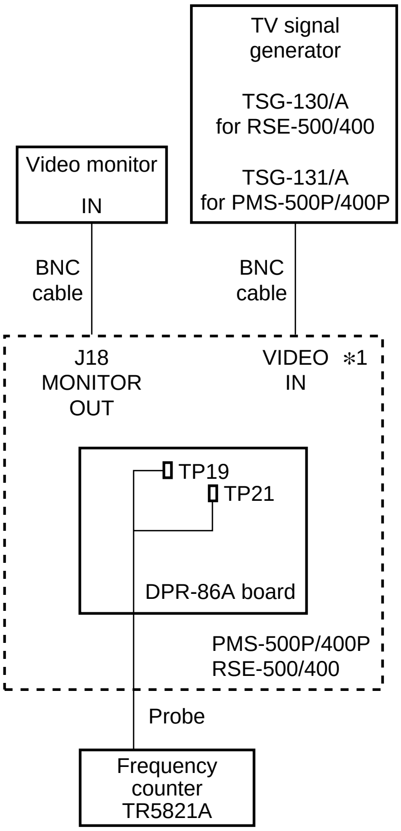
6-4. DPR-86A BOARD ADJUSTMENT

[Equipment Required]

- Dual-trace oscilloscope
- Frequency counter
- TV signal generator
- Waveform monitor/vectorscope
- ROM tool board
- BNC cable
- RS-232C cross cable
- ISDN cable
- Pseudo exchange
- Personal computer with RS-232C (IBM-PC, etc.)
- Adjusted PMS-500P/400P, RSE-500/400

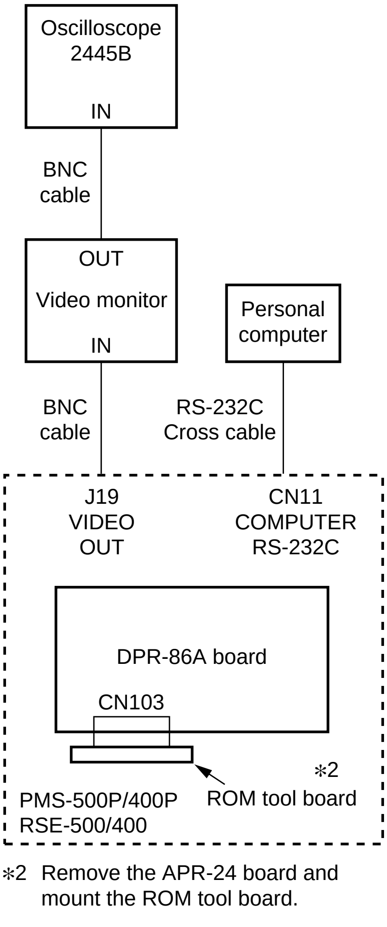
[Connection]

Connection diagram 1


TV signal generator
TSG-130/A for RSE-500/400
TSG-131/A for PMS-500P/400P
Video monitor
IN
BNC cable
BNC cable
J18 MONITOR OUT
VIDEO ∗1 IN
TP19
TP21
DPR-86A board
PMS-500P/400P
RSE-500/400
Probe
Frequency counter TR5821A

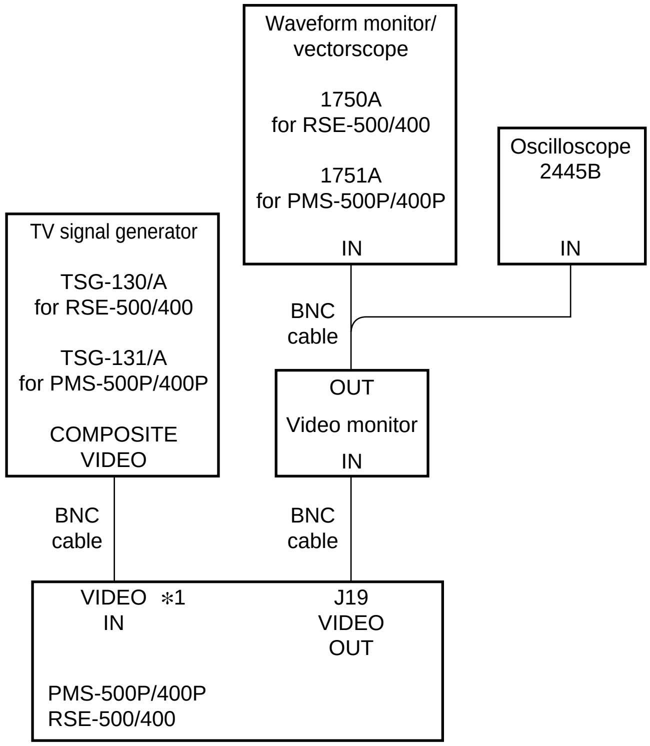
∗1 VIDEO IN: Arbitrary port

Connection diagram 2


Oscilloscope 2445B
IN
BNC cable
OUT
Video monitor
IN
Personal computer
BNC cable
RS-232C Cross cable
J19 VIDEO OUT
CN11 COMPUTER RS-232C
DPR-86A board
CN103
∗2
ROM tool board
PMS-500P/400P
RSE-500/400

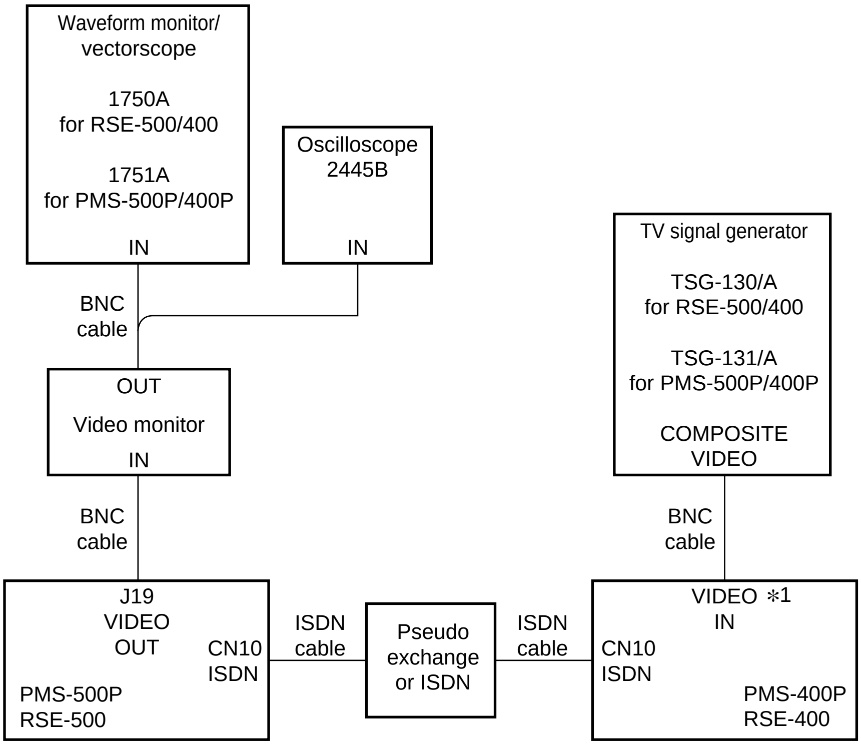
∗2 Remove the APR-24 board and mount the ROM tool board.

Connection diagram 3


Waveform monitor/
vectorscope
1750A
for RSE-500/400
1751A
for PMS-500P/400P
IN
Oscilloscope
2445B
IN
TV signal generator
TSG-130/A
for RSE-500/400
TSG-131/A
for PMS-500P/400P
COMPOSITE
VIDEO
BNC
cable
OUT
Video monitor
IN
BNC
cable
BNC
cable
VIDEO ∗1
IN
J19
VIDEO
OUT
PMS-500P/400P
RSE-500/400

∗1 VIDEO IN: Arbitrary port

Connection diagram 4


Waveform monitor/
vectorscope
1750A
for RSE-500/400
1751A
for PMS-500P/400P
IN
Oscilloscope
2445B
IN
TV signal generator
TSG-130/A
for RSE-500/400
TSG-131/A
for PMS-500P/400P
COMPOSITE
VIDEO
BNC
cable
OUT
Video monitor
IN
BNC
cable
BNC
cable
J19
VIDEO
OUT
CN10
ISDN
PMS-500P
RSE-500
ISDN
cable
Pseudo
exchange
or ISDN
ISDN
cable
VIDEO ∗1
IN
CN10
ISDN
PMS-400P
RSE-400

∗1 VIDEO IN: Arbitrary port

6-4-1. ENC Clock Frequency Adjustment

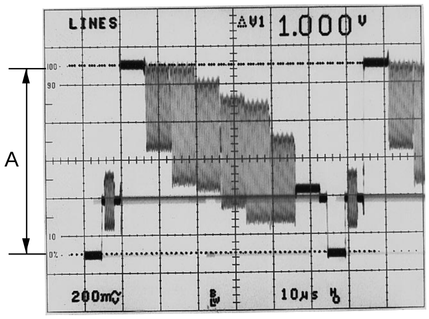
Machine condition for adjustment	Specifications	Adjustments
• Connection diagram 1 • VIDEO IN: 75% color-bar	TP21/DPR-86A (F-3) **27,000,000 ± 100 Hz**	⊘ RV4/DPR-86A (G-4)

6-4-2. Video Output Level Adjustment (PMS-500P, RSE-500 only)

Perform this adjustment using the ROM tool board.
For details of the operation, refer to the Self-Diagnosis in Section 5.

Notes:

1. **Turn on the power after confirming that switch S1 on the ROM tool board is set to DIAG.**
2. **All set up data is erased when the ENTER key is pressed with 2: Flash Memory selected by mistake. Therefore, be sure to back up the user data before performing this adjustment. (For more details, refer to the Self-Diagnosis in Section 5.)**

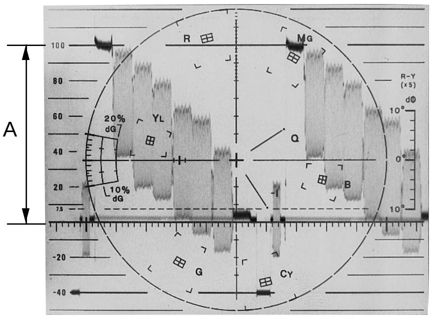
Machine condition for adjustment	Specifications	Adjustments
• Connection diagram 2 (PMS 500P, RSE-500) • Press “0”, then press the ENTER key using a personal computer so as to enter the MENU mode. (The MENU Ready message is then displayed.) • Select “22: Video Output Select”. (Key in “22”.) • Select “2: VCP VIDEO”. (Key in “2”.) • Select “23: VCP Signal Select”. (Key in “23”.) • For RSE-500, select “3”. (Key in “3”.) • For PMS-500P, select “5”. (Key in “5”.)	[ROM tool board setting] <Personal computer screen> MENU Ready: ↓ MENU Ready: 22 ↓Press the ENTER key. 0: Char 1: Super 2: VCP VIDEO 3: Super OFF 4: Supper ON: 2 ↓Press the ENTER key. MENU Ready: 23 ↓Press the ENTER key. Input VCP Video No. 2-23:3 (For RSE-500) Input VCP Video No. 2-23:5 (For PMS-500P) ↓Press the ENTER key. (Confirm that a color-bar signal is output on the monitor.) J19/VIDEO OUT (75 Ω termination)  A = 1.1 ± 0.1 Vp-p	⊘ RV5/DPR-86A (G-3)

6-4-3. Y/C Input Level Adjustment

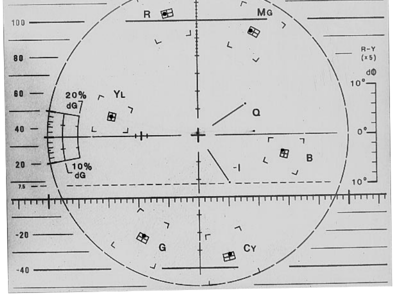
Note: Since the PMS-400P, RSE-400 has no video output signal, it communicates with the adjusted PMS-500P, RSE-500 and performs this adjustment by the video output signal of the PMS-500P, RSE-500.

<table>
<tr><th>Machine condition for adjustment</th><th>Specifications</th><th>Adjustments</th></tr>
<tr><td colspan="3">
1) For PMS-500P, RSE-500 (See Connection diagram 3)
Perform the following steps observing the monitor screen.
① Turn the power ON ten or more seconds later after turning the power OFF.
② Select <EXIT> in the menu of DIAL LIST and then push the ENTER button.
③ Select <SETTING> in the main menu and then push the ENTER button.
④ Select <OK> after “ARE YOU SURE ?” appears in the SETTING and then push the ENTER button.
⑤ Select the “27. MAINTENANCE” in the menu of SETTING, select <OK> and push the ENTER button. The maintenance menu then appears.
⑥ Set the loopback to ON in the maintenance menu, select <OK> and push the ENTER button.
⑦ Select <EXIT> after the menu returns to the SETTING and then push the ENTER button.
⑧ Select <DIAL LIST> in the main menu and push the ENTER button.
⑨ Select <DIAL> in the dial list and push the ENTER button.
⑩ The input color-bar appears on the screen.
⑪ Perform the adjustments of video level and the vectorscope waveform (⊘ RV1, RV2, RV3/DPR-86A board).

2) For PMS-400P, RSE-400 (See Connection diagram 4)
① Connect the pseudo exchange between PMS-400P, RSE-400 and PMS-500P, RSE-500.
② Monitor the video level and the vectorscope waveform on the VIDEO OUT of PMS-500P, RSE-500.
③ Adjust ⊘ RV1, RV2, RV3 on the DPR-86A board in the PMS-400P, RSE-400.
</td></tr>
<tr><td>• VIDEO IN : 75% color-bar signal</td><td>
J19/VIDEO OUT (75 Ω termination)

Step1


A = 100 ± 10 IRE

Step2


Confirm that the waveform on the vectorscope is put in the “⊞” frame.
</td><td>
⊘ RV1/DPR-86A (J-5)

⊘ RV2/DPR-86A (J-5)
⊘ RV3/DPR-86A (J-5)
</td></tr>
</table>

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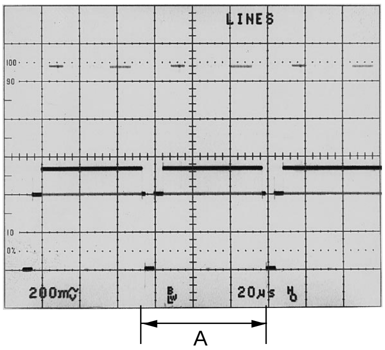
6-4-4. OSDC Frequency Adjustment

Machine condition for adjustment	Specifications	Adjustments
• Connection diagram 1 • VIDEO IN: 75% color-bar	TP19/DPR-86A (F-2) **14,318,181 ± 200 Hz**	⊘ CV2/DPR-86A (F-2)

6-4-5. Character Horizontal Position Adjustment

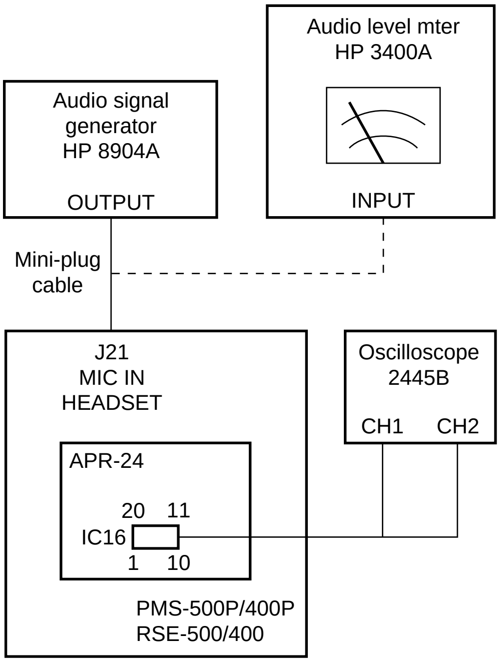
Machine condition for adjustment	Specifications	Adjustments
• Connection diagram 3 (PMS-500P, RSE-500) Connection diagram 4 (PMS-400P, RSE-400) • VIDEO IN: Non-signal	J19/VIDEO OUT (75 Ω termination)  A = 55 ± 1 μs	⊘ CV1/DPR-86A (E-2)

6-5. APR-24 BOARD ADJUSTMENT

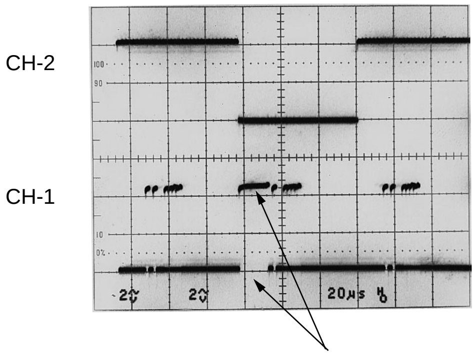
[Equipment Required]

- Dual-trace oscilloscope
- Audio signal generator
- Audio level meter
- Mini-plug cable

[Connection]


Audio level mter
HP 3400A
INPUT
Audio signal
generator
HP 8904A
OUTPUT
Mini-plug
cable
J21
MIC IN
HEADSET
APR-24
20
11
IC16
1
10
PMS-500P/400P
RSE-500/400
Oscilloscope
2445B
CH1
CH2

6-5-1. AD/DA Offset Adjustment

Machine condition for adjustment	Specifications	Adjustments
• Non-signal	CH-1 : IC16-18PIN/APR-24 (A-5) CH-2 : IC16-17PIN/APR-24 (A-5)  Confirm that both waveforms are lightly uniform.	⊘ RV4/APR-24 (A-4)

SECTION 7
SEMICONDUCTOR PIN ASSIGNMENTS

Semiconductors of which functions are equivalent are described here. For parts replacement, refer to the section of Spare Parts in this manual. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

DIODE	Page
11EQS04	7-3
11EQS04-TA1B	7-3
1G4B42	7-3
1S2835-T1	7-3
1S2836	7-3
1S2837-T1	7-3
1S953-7-T1	7-3
1SS184	7-3
1SS226	7-3
1SS226-TE85L	7-3
1SS294	7-3
1SS294-TE85L	7-3
AA3422S	7-3
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SN74HC165ANS-E05	7-20
SN74HC244ANS	7-20
SN74HC244ANS-E05	7-20
SN74HC32ANS	7-20
SN74HC32ANS-E05	7-20
SN74HC374ANS	7-21
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TC74VHC164F(EL) 7-25
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TC74VHC374F 7-21
TC74VHC374F(EL) 7-21
TC74VHC573F 7-25
TC74VHC573F(EL) 7-25
TC74VHC574F 7-22
TC74VHC574F(EL) 7-22
TC74VHC74F(EL) 7-21
TC74VHC86F 7-25
TC74VHC86F(EL) 7-25
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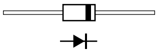
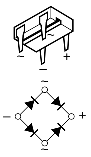
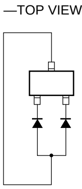


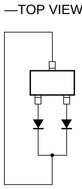
11EQS04
11EQS04-TA1B
1S953-7-T1



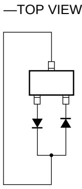
1G4B42



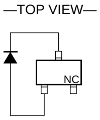
1S2835-T1
1S2836



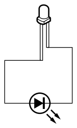
1S2837-T1
1SS184



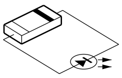
1SS226
1SS226-TE85L



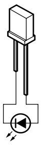
1SS294
1SS294-TE85L



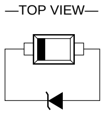
AA3422S ; ORANGE
TLO123



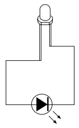
CL-150PG-CD ; GREEN
CL-150PG-CD-T



GL8KG21T ; GREEN

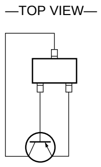


RD15SB
RD15SB-T1
RD3.9SB2
RD3.9SB2-T1
RD39SB-T1
RD5.6SB
RD5.6SB-T1
RD6.8SB2-T1

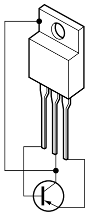


SLP281C-51 ; GREEN
TLG123A

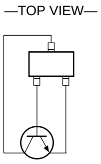
TRANSISTOR



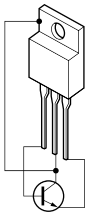
2SA1162G
2SA1721-O-TE85L
2SA812-T1-M5M6



2SB596-Y
2SB858-C



2SC1623
2SC1623-T1-L5L6
2SC4497-O-TE85L

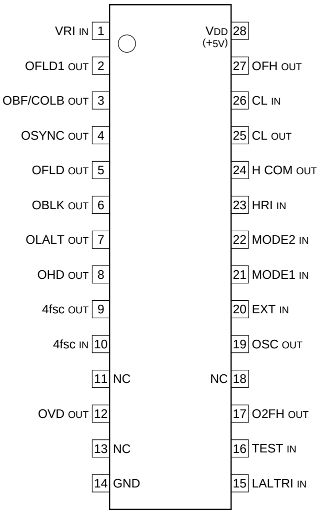


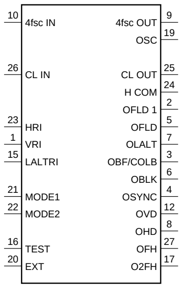
2SD1135-C
2SD2012
2SD526-Y

CXD1217M (SONY)FLAT PACKAGE
CXD1217M-TH

C-MOS SYNC GENERATOR

—TOP VIEW—

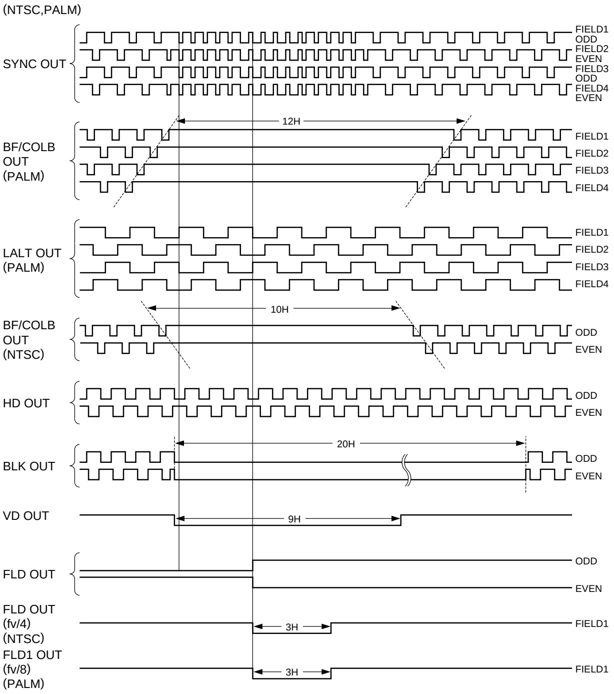

VRI IN 1
OFLD1 OUT 2
OBF/COLB OUT 3
OSYNC OUT 4
OFLD OUT 5
OBLK OUT 6
OLALT OUT 7
OHD OUT 8
4fsc OUT 9
4fsc IN 10
11 NC
OVD OUT 12
13 NC
14 GND
VDD (+5V) 28
27 OFH OUT
26 CL IN
25 CL OUT
24 H COM OUT
23 HRI IN
22 MODE2 IN
21 MODE1 IN
20 EXT IN
19 OSC OUT
NC 18
17 O2FH OUT
16 TEST IN
15 LALTRI IN

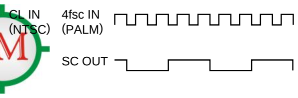

10 4fsc IN
26 CL IN
23 HRI
1 VRI
15 LALTRI
21 MODE1
22 MODE2
16 TEST
20 EXT
4fsc OUT 9
OSC 19
CL OUT 25
H COM 24
OFLD 1 2
OFLD 5
OLALT 7
OBF/COLB 3
OBLK 6
OSYNC 4
OVD 12
OHD 8
OFH 27
O2FH 17

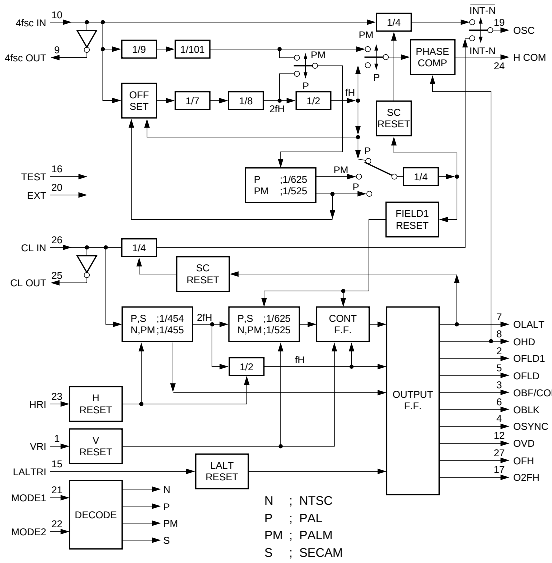
SYSTEM	4fsc	CLOCK
NTSC	910fH	910fH
PAL	1135fH+2fV	908fH
PALM	909fH	910fH
SECAM	—	908fH

INPUT		SYSTEM
MODE1	MODE2	
0	0	NTSC
0	1	SECAM
1	0	PALM
1	1	PAL

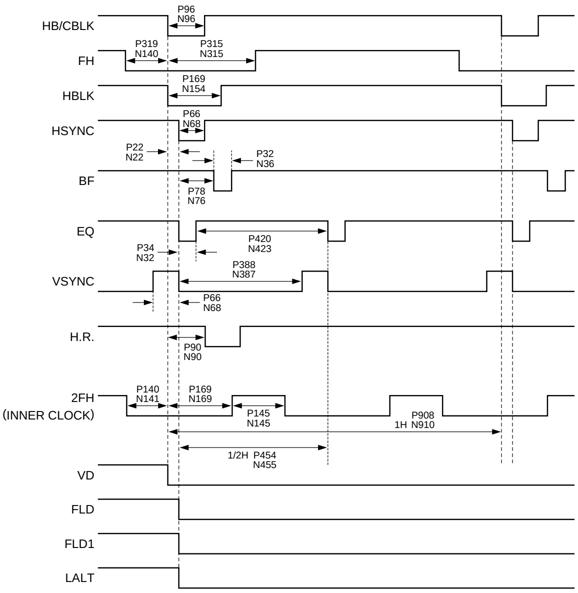
0 ; LOW LEVEL
1 ; HIGH LEVEL


(NTSC,PALM)
SYNC OUT
FIELD1 ODD
FIELD2 EVEN
FIELD3 ODD
FIELD4 EVEN
12H
BF/COLB OUT (PALM)
FIELD1
FIELD2
FIELD3
FIELD4
LALT OUT (PALM)
FIELD1
FIELD2
FIELD3
FIELD4
10H
BF/COLB OUT (NTSC)
ODD
EVEN
HD OUT
ODD
EVEN
20H
BLK OUT
ODD
EVEN
VD OUT
9H
FLD OUT
ODD
EVEN
FLD OUT (fv/4) (NTSC)
3H
FIELD1
FLD1 OUT (fv/8) (PALM)
3H
FIELD1


CL IN (NTSC)
4fsc IN (PALM)
SC OUT


4fsc IN 10
4fsc OUT 9
1/9
1/101
PM
P
OFF SET
1/7
1/8
2fH
1/2
fH
1/4
INT-N
19 OSC
PHASE COMP
INT-N
24 H COM
SC RESET
P
PM
1/4
TEST 16
EXT 20
P ;1/625
PM ;1/525
FIELD1 RESET
CL IN 26
CL OUT 25
1/4
SC RESET
P,S ;1/454
N,PM;1/455
2fH
P,S ;1/625
N,PM;1/525
CONT F.F.
1/2
fH
OUTPUT F.F.
HRI 23
H RESET
VRI 1
V RESET
LALTRI 15
LALT RESET
MODE1 21
MODE2 22
DECODE
N
P
PM
S
7 OLALT
8 OHD
2 OFLD1
5 OFLD
3 OBF/COLB
6 OBLK
4 OSYNC
12 OVD
27 OFH
17 O2FH

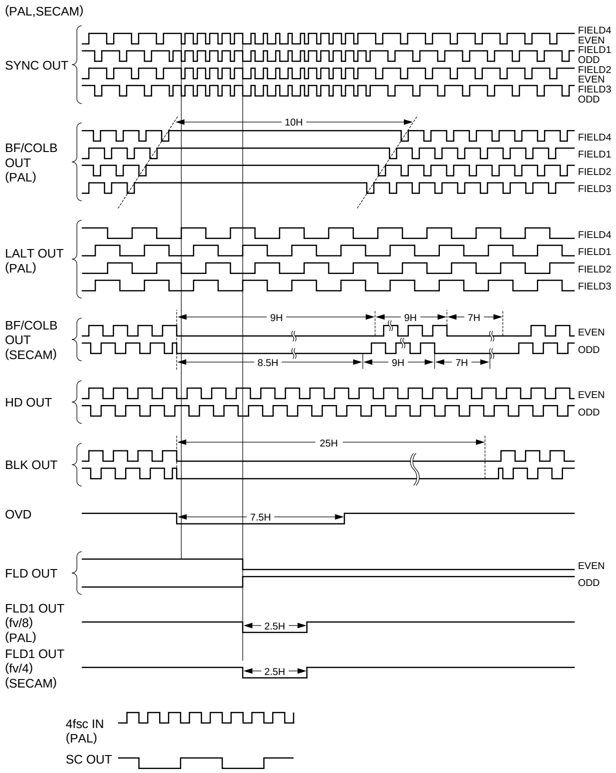
N ; NTSC
P ; PAL
PM ; PALM
S ; SECAM


HB/CBLK
P96 N96
FH
P319 N140
P315 N315
HBLK
P169 N154
HSYNC
P66 N68
P22 N22
P32 N36
BF
P78 N76
EQ
P34 N32
P420 N423
VSYNC
P388 N387
P66 N68
H.R.
P90 N90
2FH (INNER CLOCK)
P140 N141
P169 N169
P145 N145
P908 1H N910
1/2H P454 N455
VD
FLD
FLD1
LALT

P : PAL,SECAM
N : NTSC,PALM

INPUT		
4fSC IN	;	4fSC INPUT
CL IN	;	CLOCK INPUT
EXT	;	SYNC MODE SELECT (L ; INTERNAL/H ; EXTERNAL)
HRI	;	H RESET
LALTRI	;	LINE CHANGE RESET
MODE 1, 2	;	SYSTEM SELECT
VRI	;	V RESET

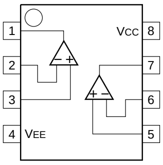
OUTPUT		
4fSC OUT	;	4fSC OUTPUT
CL OUT	;	CLOCK OUTPUT
H COM	;	PHASE COMPARATOR
O2fH	;	2fH OUTPUT
OBF/COLB	;	BURST FLAG/COLOR BLANKING
OBLK	;	COMPOSITE BLANKING
OFH	;	H FREQUENCE
OFLD	;	EVEN,ODD
OFLD1	;	FIELD1
OHD	;	H DRIVE
OLALT	;	LINE CHANGE
OSC	;	SUB CARRIER
OSYNC	;	COMPOSITE SYNC
OVD	;	V DRIVE


(PAL,SECAM)
SYNC OUT
FIELD4 EVEN
FIELD1 ODD
FIELD2 EVEN
FIELD3 ODD
10H
BF/COLB OUT (PAL)
FIELD4
FIELD1
FIELD2
FIELD3
LALT OUT (PAL)
FIELD4
FIELD1
FIELD2
FIELD3
BF/COLB OUT (SECAM)
9H
9H
7H
EVEN
8.5H
9H
7H
ODD
HD OUT
EVEN
ODD
BLK OUT
25H
OVD
7.5H
FLD OUT
EVEN
ODD
FLD1 OUT (fv/8) (PAL)
2.5H
FLD1 OUT (fv/4) (SECAM)
2.5H
4fsc IN (PAL)
SC OUT

BA10358F-E2 (ROHM)FLAT PACKAGE
UPC358G2-E2

DUAL OPERATIONAL AMPLIFIERS (SINGLE-SUPPLY TYPE)

—TOP VIEW—

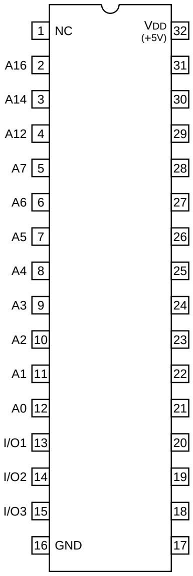

1
2
3
4 VEE
VCC 8
7
6
5

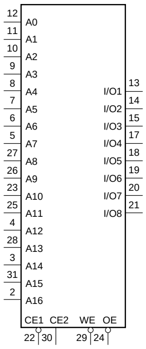
TYPE	VCC - VEE
828 TYPE	+5 to +36V
2244 TYPE	+2.5 to +36V
2904 TYPE	+3 to +24V
3404 TYPE	+4 to +32V
3414 TYPE	+3 to +10V
4572 TYPE	+4 to +14V
5216 TYPE	+4 to +32V
7022 TYPE	+3 to +16V
75W01 TYPE	+3 to +10V
33172 TYPE	+3 to +44V
OTHERS	+3 to +36V

CXK581000AM-10LL-TL (SONY)FLAT PACKAGE

C-MOS 1M (131,072 × 8)-BIT STATIC RAM

—TOP VIEW—

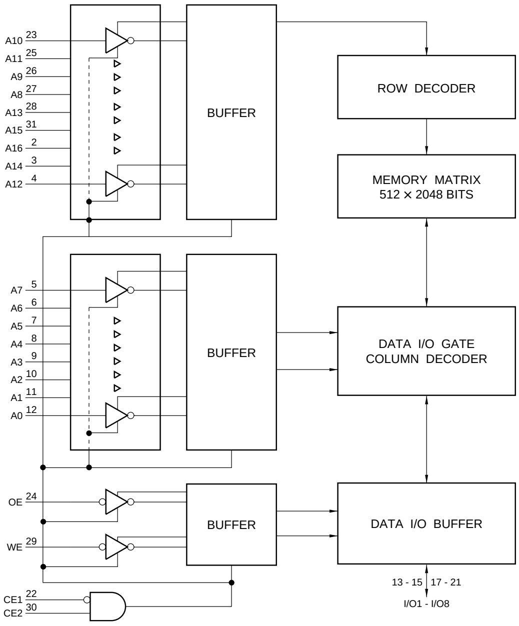

1 NC
VDD (+5V) 32
A16 2
31 A15
A14 3
30 CE2
A12 4
29 $\overline{WE}$
A7 5
28 A13
A6 6
27 A8
A5 7
26 A9
A4 8
25 A11
A3 9
24 $\overline{OE}$
A2 10
23 A10
A1 11
22 $\overline{CE1}$
A0 12
21 I/O8
I/O1 13
20 I/O7
I/O2 14
19 I/O6
I/O3 15
18 I/O5
16 GND
17 I/O4


12 A0
11 A1
10 A2
9 A3
8 A4
7 A5
6 A6
5 A7
27 A8
26 A9
23 A10
25 A11
4 A12
28 A13
3 A14
31 A15
2 A16
I/O1 13
I/O2 14
I/O3 15
I/O4 17
I/O5 18
I/O6 19
I/O7 20
I/O8 21
CE1 CE2 WE OE
22 30 29 24

A0 - A16 ; ADDRESS INPUT
I/O1 - I/O8 ; DATA OUTPUTS
$\overline{\text{CE1}}$, CE2 ; CHIP ENABLE INPUTS
$\overline{\text{WE}}$; WRITE ENABLE INPUT
$\overline{\text{OE}}$; OUTPUT ENABLE INPUT

CE1	CE2	OE	WE	MODE	I/O TERMINAL
1	×	×	×	NOT SELECT	HI-Z
×	0	×	×	NOT SELECT	HI-Z
0	1	1	1	OUTPUT DISABLE	HI-Z
0	1	0	1	READ	DATA OUTPUT
0	1	×	0	WRITE	DATA INPUT

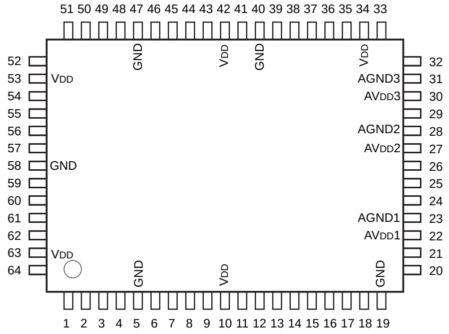
0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE
HI-Z ; HIGH IMPEDANCE


A10 23
A11 25
A9 26
A8 27
A13 28
A15 31
A16 2
A14 3
A12 4
BUFFER
ROW DECODER
MEMORY MATRIX 512 × 2048 BITS
A7 5
A6 6
A5 7
A4 8
A3 9
A2 10
A1 11
A0 12
BUFFER
DATA I/O GATE COLUMN DECODER
OE 24
WE 29
BUFFER
DATA I/O BUFFER
CE1 22
CE2 30
13 - 15 17 - 21
I/O1 - I/O8

CXD1910Q (SONY)

DIGITAL VIDEO ENCODER

—TOP VIEW—


51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33
52
53
54
55
56
57
58
59
60
61
62
63
64
32
31
30
29
28
27
26
25
24
23
22
21
20
GND
VDD
GND
VDD
VDD
AGND3
AVDD3
AGND2
AVDD2
GND
AGND1
AVDD1
VDD
GND
VDD
GND
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

INPUT

FI	; FIELD ID INPUT
IREF	; REFERENCE CURRENT INPUT
PD0-15	; PIXEL DATA INPUTS
SI/SDA	; SERIAL DATA INPUT
SCK/SCL	; SERIAL CLOCK INPUT
SYSCLK	; SYSTEM CLOCK INPUT
TCK	; CLOCK INPUT FOR JTAG
TDI	; SERIAL DATA INPUT FOR JTAG
TMS	; CONTROL SIGNAL INPUT FOR JTAG
TRST	; RESET SIGNAL INPUT FOR JTAG
VREF	; REFERENCE VOLTAGE INPUT
XCS/SA	; CHIP SELECT INPUT
XIICEN	; SERIAL INTERFACE MODE SELECT INPUT
XRST	; SYSTEM RESET INPUT
XTEST1-4	; TEST MODE CONTROL INPUTS
XVRST	; V-SYNC RESET INPUT

OUTPUT

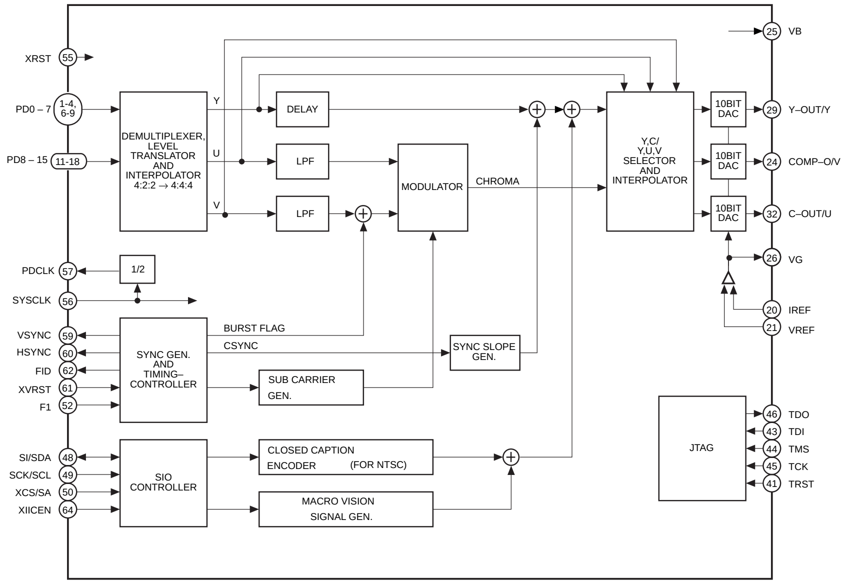
COMP-O/V	; COMPOSITE/V D/A CONVERTER OUTPUT
C-OUT/U	; CHROMA/U D/A CONVERTER OUTPUT
FID	; FIELD ID OUTPUT
HSYNC	; H SYNC OUTPUT
PDCLK	; PIXEL DATA CLOCK OUTPUT FOR 13.5MHz
SO	; SERIAL OUTPUT
TDO	; SERIAL DATA OUTPUT FOR JTAG
VB,VG	; EXTERNAL CAPACITOR TERMINAL
VSYNC	; V SYNC OUTPUT
Y-OUT/Y	; Y D/A CONVERTER OUTPUT

INPUT/OUTPUT

TD0-10	; TEST DATA BUS

(AVDD1 to 3 = +3.3 to 5V, VDD = +3.3 to 5V)

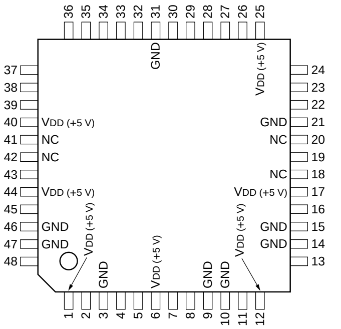
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I	PD7	17	I/O	PD9/TD1	33	I/O	TD10	49	I	SCK/SCL
2	I	PD6	18	I/O	PD8/TD0	34	-	VDD	50	I	XCS/SA
3	I	PD5	19	-	GND	35	I/O	TD9	51	I	XVRST
4	I	PD4	20	I	IREF	36	I/O	TD8	52	I	FI
5	-	GND	21	I	VREF	37	I	XTEST1	53	-	VDD
6	I	PD3	22	-	AVDD1	38	I	XTEST2	54	I	XTEST4
7	I	PD2	23	-	AGND1	39	I	XTEST3	55	I	XRST
8	I	PD1	24	O	COMP-O/V	40	-	GND	56	I	SYSCLK
9	I	PD0	25	O	VB	41	I	TRST	57	O	PDCLK
10	-	VDD	26	O	VG	42	-	VDD	58	-	GND
11	I/O	PD15/TD7	27	-	AVDD2	43	I	TDI	59	O	VSYNC
12	I/O	PD14/TD6	28	-	AGND2	44	I	TMS	60	O	HSYNC
13	I/O	PD13/TD5	29	O	Y-OUT/Y	45	I	TCK	61	O	SO
14	I/O	PD12/TD4	30	-	AVDD3	46	O	TDO	62	O	FID
15	I/O	PD11/TD3	31	-	AGND3	47	-	GND	63	-	VDD
16	I/O	PD10/TD2	32	O	C-OUT/U	48	I	SI/SDA	64	I	XIICEN

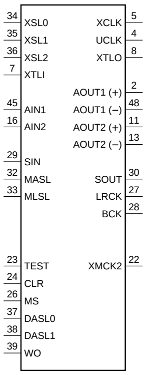

XRST 55
PD0 – 7 1-4, 6-9
PD8 – 15 11-18
DEMULTIPLEXER, LEVEL TRANSLATOR AND INTERPOLATOR 4:2:2 → 4:4:4
Y
U
V
DELAY
LPF
LPF
MODULATOR
CHROMA
Y,C/ Y,U,V SELECTOR AND INTERPOLATOR
10BIT DAC
10BIT DAC
10BIT DAC
25 VB
29 Y–OUT/Y
24 COMP–O/V
32 C–OUT/U
26 VG
20 IREF
21 VREF
PDCLK 57
1/2
SYSCLK 56
VSYNC 59
HSYNC 60
FID 62
XVRST 61
F1 52
SYNC GEN. AND TIMING–CONTROLLER
BURST FLAG
CSYNC
SYNC SLOPE GEN.
SUB CARRIER GEN.
SI/SDA 48
SCK/SCL 49
XCS/SA 50
XIICEN 64
SIO CONTROLLER
CLOSED CAPTION ENCODER (FOR NTSC)
MACRO VISION SIGNAL GEN.
JTAG
46 TDO
43 TDI
44 TMS
45 TCK
41 TRST

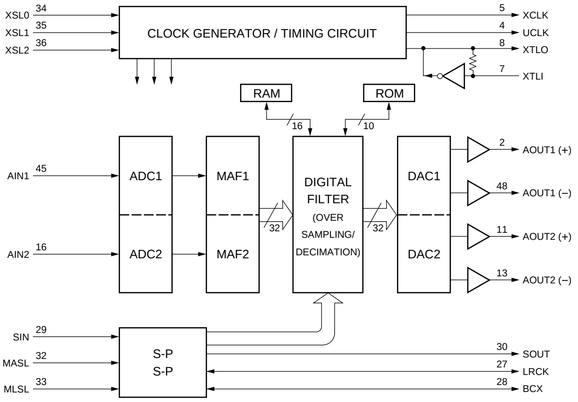
CXD2570Q (SONY)

C-MOS AUDIO 1-BIT A/D CONVERTER

—TOP VIEW—


36 35 34 33 32 31 30 29 28 27 26 25
37 38 39 40 41 42 43 44 45 46 47 48
24 23 22 21 20 19 18 17 16 15 14 13
1 2 3 4 5 6 7 8 9 10 11 12
GND
VDD (+5 V)
VDD (+5 V)
NC
NC
VDD (+5 V)
GND
GND
GND
NC
NC
VDD (+5 V)
GND
GND
VDD (+5 V)
GND
VDD (+5 V)
GND
GND
VDD (+5 V)


34 XSL0
35 XSL1
36 XSL2
7 XTLI
45 AIN1
16 AIN2
29 SIN
32 MASL
33 MLSL
23 TEST
24 CLR
26 MS
37 DASL0
38 DASL1
39 WO
XCLK 5
UCLK 4
XTLO 8
AOUT1 (+) 2
AOUT1 (–) 48
AOUT2 (+) 11
AOUT2 (–) 13
SOUT 30
LRCK 27
BCK 28
XMCK2 22


XSL0 34
XSL1 35
XSL2 36
CLOCK GENERATOR / TIMING CIRCUIT
5 XCLK
4 UCLK
8 XTLO
7 XTLI
RAM
ROM
16
10
AIN1 45
AIN2 16
ADC1
ADC2
MAF1
MAF2
32
DIGITAL FILTER (OVER SAMPLING/ DECIMATION)
32
DAC1
DAC2
2 AOUT1 (+)
48 AOUT1 (–)
11 AOUT2 (+)
13 AOUT2 (–)
SIN 29
MASL 32
MLSL 33
S-P
S-P
30 SOUT
27 LRCK
28 BCX

(VDD = +5 V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	—	VDD	25	—	VDD
2	O	AOUT1 (+)	26	I	MS
3	—	GND	27	I/O	LRCK
4	O	UCLK	28	I/O	BCK
5	O	XCLK	29	I	SIN
6	—	VDD	30	O	SOUT
7	I	XTLI	31	—	GND
8	O	XTLO	32	I	MASL
9	—	GND	33	I	MLSL
10	—	GND	34	I	XSL0
11	O	AOUT2 (+)	35	I	XSL1
12	—	VDD	36	I	XSL2
13	O	AOUT2 (–)	37	I	DASL0
14	—	GND	38	I	DASL1
15	—	GND	39	I	WO
16	I	AIN2	40	—	VDD
17	—	VDD	41	—	NC
18	—	NC	42	—	NC
19	—	SUB	43	—	SUB
20	—	NC	44	—	VDD
21	—	GND	45	I	AIN1
22	O	XMCK2	46	—	GND
23	I	TEST	47	—	GND
24	I	CLR	48	O	AOUT1 (–)

INPUT

AIN1 : CH-1 A/D CONVERTER ANALOG
AIN2 : CH-2 A/D CONVERTER ANALOG
CLR : SYSTEM CLEAR (NORMALLY SET AT "H", CLEAR AT "L")
DASL0 : IC MEASURING (NORMALLY SET AT "H")
DASL1 : IC MEASURING (NORMALLY SET AT "L")
MASL : INPUTS 16-BIT SERIAL DATA TO FIRST HALF 16-BIT SLOT OR LATTER HALF 32-BIT SLOT IN 32-BIT SLOT
MLSL : SELECTS 16-BIT SERIAL DATA INPUT/OUTPUT IN LSB OR MSB FIRST ("H" = MSB FIRST, "L" = LSB FIRST)
MS : SWITCHES MASTER/SUB MODE ("H" = MASTER MODE, "L" = SUB MODE)
SIN : 1 SAMPLING 2 CHANNELS SERIAL DATA
TEST : TEST PIN (NORMALLY SET AT "L")
WO : SYNC WINDOW OPEN ("H" = WINDOW MASKED, "L" = WINDOW OPEN)
XSL0 - XSL2 : CRYSTAL OSCILLATION
XTLI : CRYSTAL OSCILLATOR ALSO RECEIVES EXTERNAL MASTER CLOCK

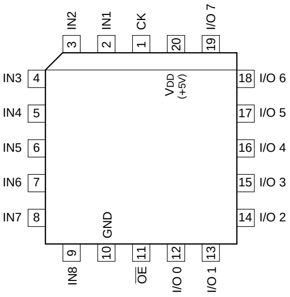
OUTPUT

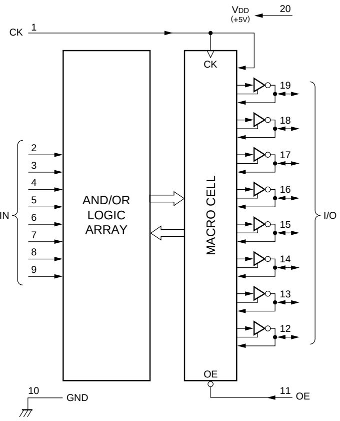
AOUT1 (–) : CH-1 D/A CONVERTER ANALOG NEGATIVE-PHASE
AOUT1 (+) : CH-1 D/A CONVERTER ANALOG POSITIVE-PHASE
AOUT2 (+) : CH-2 D/A CONVERTER ANALOG POSITIVE-PHASE
AOUT2 (–) : CH-2 D/A CONVERTER ANALOG NEGATIVE-PHASE
BCK : SERIAL BIT TRANSFER CLOCK FOR SERIAL INPUT DATA SIN AND SERIAL OUTPUT DATA SOUT
LRCK : SERIAL I/O SAMPLING FREQUENCY CLOCK. MASTER WHEN OUTPUT, SUB WHEN INPUT
SOUT : 1 SAMPLING 2 CHANNELS SERIAL DATA
UCLK : 1/2 DIVIDED CLOCK FREQUENCY FROM XTLI
XCLK : 256 fs/512 fs CLOCK
XMCK2 : IC MEASURING (NORMALLY OUTPUT AT "L")
XTLO : CRYSTAL OSCILLATOR

GAL16V8B-25QJ (LATTICE)

C-MOS ELECTRICALLY ERASABLE PROGRAMMABLE LOGIC DEVICE

—TOP VIEW—


IN2 3
IN1 2
CK 1
20
I/O 7 19
IN3 4
IN4 5
IN5 6
IN6 7
IN7 8
18 I/O 6
17 I/O 5
16 I/O 4
15 I/O 3
14 I/O 2
VDD (+5V)
GND
IN8 9
GND 10
OE 11
I/O 0 12
I/O 1 13

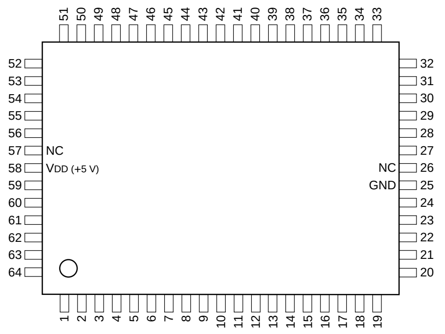

VDD (+5V) 20
CK 1
CK
IN
2 3 4 5 6 7 8 9
AND/OR LOGIC ARRAY
MACRO CELL
19 18 17 16 15 14 13 12
I/O
OE
10 GND
11 OE

*ABOVE DIAGRAM SHOWS CONDITIONS BEFORE PROGRAMMING.

CXP5068H-245Q (SONY)

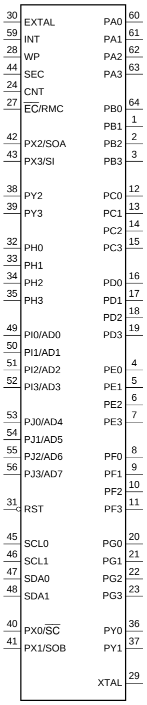
C-MOS 4-BIT SINGLE CHIP MICROCOMPUTER

—TOP VIEW—


51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33
52 53 54 55 56 57 58 59 60 61 62 63 64
NC
VDD (+5 V)
NC
GND
32 31 30 29 28 27 26 25 24 23 22 21 20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

(VDD = +5 V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I/O	PB1	17	I/O	PD1	33	I/O	PH1	49	I/O	PI0/AD0
2	I/O	PB2	18	I/O	PD2	34	I/O	PH2	50	I/O	PI1/AD1
3	I/O	PB3	19	I/O	PD3	35	I/O	PH3	51	I/O	PI2/AD2
4	I/O	PE0	20	I/O	PG0	36	O	PY0	52	I/O	PI3/AD3
5	I/O	PE1	21	I/O	PG1	37	O	PY1	53	I/O	AD4/PJ0
6	I/O	PE2	22	I/O	PG2	38	I	PY2	54	I/O	AD5/PJ1
7	I/O	PE3	23	I/O	PG3	39	I	PY3	55	I/O	AD6/PJ2
8	I/O	PF0	24	I	CNT	40	I/O	PX0/$\overline{\text{SC}}$	56	I/O	AD7/PJ3
9	I/O	PF1	25	—	GND	41	I/O	PX1/SOB	57	—	NC
10	I/O	PF2	26	—	NC	42	I/O	PX2/SOA	58	—	VDD
11	I/O	PF3	27	I	$\overline{\text{EC}}$/RMC	43	I	PX3/SI	59	I	INT
12	I/O	PC0	28	I	WP	44	I	SEC	60	I/O	PA0
13	I/O	PC1	29	O	XTAL	45	I/O	SCL0	61	I/O	PA1
14	I/O	PC2	30	I	EXTAL	46	I/O	SCL1	62	I/O	PA2
15	I/O	PC3	31	I/O	$\overline{\text{RST}}$	47	I/O	SDA0	63	I/O	PA3
16	I/O	PD0	32	I/O	PH0	48	I/O	SDA1	64	I/O	PB0


30 EXTAL
59 INT
28 WP
44 SEC
24 CNT
27 EC/RMC
42 PX2/SOA
43 PX3/SI
38 PY2
39 PY3
32 PH0
33 PH1
34 PH2
35 PH3
49 PI0/AD0
50 PI1/AD1
51 PI2/AD2
52 PI3/AD3
53 PJ0/AD4
54 PJ1/AD5
55 PJ2/AD6
56 PJ3/AD7
31 RST
45 SCL0
46 SCL1
47 SDA0
48 SDA1
40 PX0/SC
41 PX1/SOB
PA0 60
PA1 61
PA2 62
PA3 63
PB0 64
PB1 1
PB2 2
PB3 3
PC0 12
PC1 13
PC2 14
PC3 15
PD0 16
PD1 17
PD2 18
PD3 19
PE0 4
PE1 5
PE2 6
PE3 7
PF0 8
PF1 9
PF2 10
PF3 11
PG0 20
PG1 21
PG2 22
PG3 23
PY0 36
PY1 37
XTAL 29

INPUT

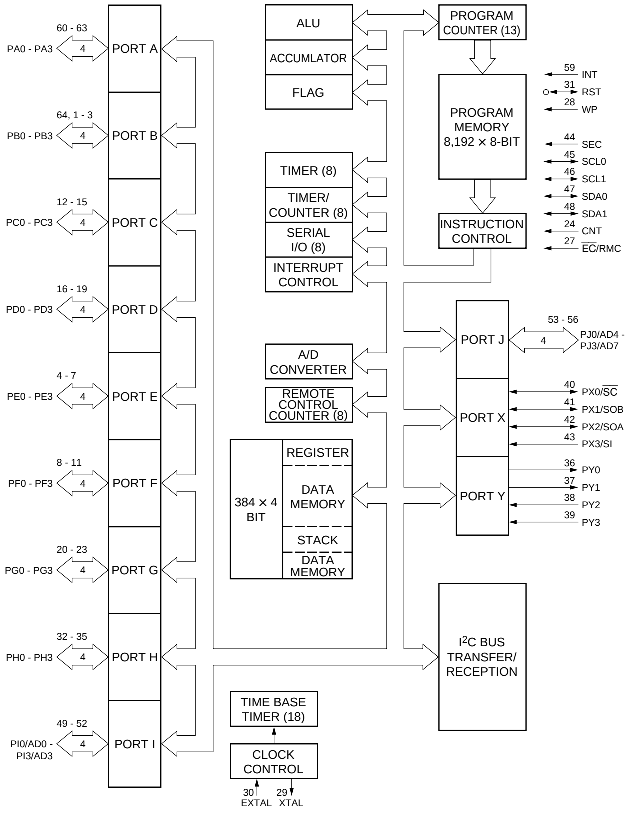
CNT : COUNTER
$\overline{\text{EC}}$/RMC : EVENT COUNTER
EXTAL : CLOCK
INT : EXTERNAL INTERRUPTION
RY2, RY3 : PORT Y
SEC : SYNC CLOCK
PX3/SI : PORT X/SERIAL INPUT
WP : WAKE-UP

OUTPUT

PY0, PY1 : PORT Y
XTAL : CLOCK

INPUT/OUTPUT

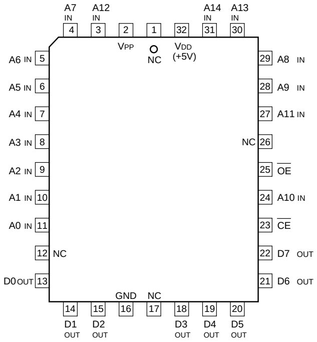
PA0 - PA3 : PORT A (4-BIT)
PB0 - PB3 : PORT B (4-BIT)
PC0 - PC3 : PORT C (4-BIT)
PD0 - PD3 : PORT D (4-BIT)
PE0 - PE3 : PORT E (4-BIT)
PF0 - PF3 : PORT F (4-BIT)
PG0 - PG3 : PORT G (4-BIT)
PH0 - PH3 : PORT H (4-BIT)
PI0/AD0 - PI3/AD3 : PORT I (4-BIT)
OR ANALOG VOLTAGE INPUT
PJ0/AD4 - PJ3/AD7 : PORT J (4-BIT)
OR ANALOG VOLTAGE INPUT
$\overline{\text{RST}}$: RESET
PX0/$\overline{\text{SC}}$: PORT X/SERIAL CLOCK
SCL0, SCL1 : I^2 C BUS I/F TRANSFER CLOCK
SDA0, SDA1 : I^2 C BUS I/F TRANSFER DATA
PX2/SOA, PX1/SOB : PORT X/SERIAL OUTPUT

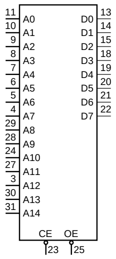

60 - 63
PA0 - PA3
4
PORT A
64, 1 - 3
PB0 - PB3
PORT B
12 - 15
PC0 - PC3
PORT C
16 - 19
PD0 - PD3
PORT D
4 - 7
PE0 - PE3
PORT E
8 - 11
PF0 - PF3
PORT F
20 - 23
PG0 - PG3
PORT G
32 - 35
PH0 - PH3
PORT H
49 - 52
PI0/AD0 - PI3/AD3
PORT I
ALU
ACCUMLATOR
FLAG
TIMER (8)
TIMER/ COUNTER (8)
SERIAL I/O (8)
INTERRUPT CONTROL
A/D CONVERTER
REMOTE CONTROL COUNTER (8)
384 × 4 BIT
REGISTER
DATA MEMORY
STACK
DATA MEMORY
TIME BASE TIMER (18)
CLOCK CONTROL
30 EXTAL
29 XTAL
PROGRAM COUNTER (13)
PROGRAM MEMORY 8,192 × 8-BIT
INSTRUCTION CONTROL
59 INT
31 RST
28 WP
44 SEC
45 SCL0
46 SCL1
47 SDA0
48 SDA1
24 CNT
27 EC/RMC
PORT J
53 - 56
PJ0/AD4 - PJ3/AD7
PORT X
40 PX0/SC
41 PX1/SOB
42 PX2/SOA
43 PX3/SI
PORT Y
36 PY0
37 PY1
38 PY2
39 PY3
I2C BUS TRANSFER/ RECEPTION

CY27C256-120JC (SIGNETICS)

C-MOS 256k (32k × 8)-BIT EPROM

—TOP VIEW—

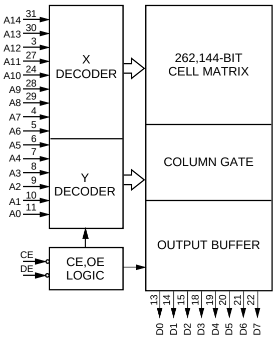

A7 IN 4
A12 IN 3
2
1
32
A14 IN 31
A13 IN 30
VPP
NC
VDD (+5V)
A6 IN 5
A5 IN 6
A4 IN 7
A3 IN 8
A2 IN 9
A1 IN 10
A0 IN 11
12 NC
D0 OUT 13
29 A8 IN
28 A9 IN
27 A11 IN
NC 26
25 OE
24 A10 IN
23 CE
22 D7 OUT
21 D6 OUT
14 D1 OUT
15 D2 OUT
GND 16
NC 17
18 D3 OUT
19 D4 OUT
20 D5 OUT


11 A0
10 A1
9 A2
8 A3
7 A4
6 A5
5 A6
4 A7
29 A8
28 A9
24 A10
27 A11
3 A12
30 A13
31 A14
D0 13
D1 14
D2 15
D3 18
D4 19
D5 20
D6 21
D7 22
CE 23
OE 25

A0 - A14 ; ADDRESS INPUT
$\overline{\text{CE}}$; CHIP ENABLE INPUT
D0 - D7 ; DATA OUTPUT
$\overline{\text{OE}}$; OUTPUT ENABLE INPUT
VPP ; PROGRAM POWER SUPPLY

An	$\overline{\text{CE}}$	$\overline{\text{OE}}$	VPP	Dn	FUNCTION
An	0	0	+5V	D out	READ
An	0	1	+5V	HI-Z	OUTPUT DISABLE
×	1	×	+5V	HI-Z	STANDBY

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

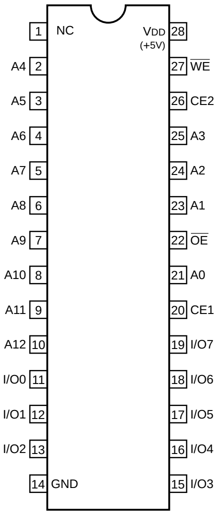

A14 31
A13 30
A12 3
A11 27
A10 24
A9 28
A8 29
A7 4
A6 5
A5 6
A4 7
A3 8
A2 9
A1 10
A0 11
X DECODER
Y DECODER
262,144-BIT CELL MATRIX
COLUMN GATE
OUTPUT BUFFER
CE
OE
CE,OE LOGIC
13 14 15 18 19 20 21 22
D0 D1 D2 D3 D4 D5 D6 D7

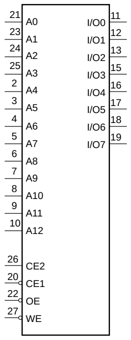
http://getMANUAL.com

CY6264-70SC-T2 (CYPRESS)

C-MOS 64k (8k × 8) BIT STATIC RAM

–TOP VIEW–

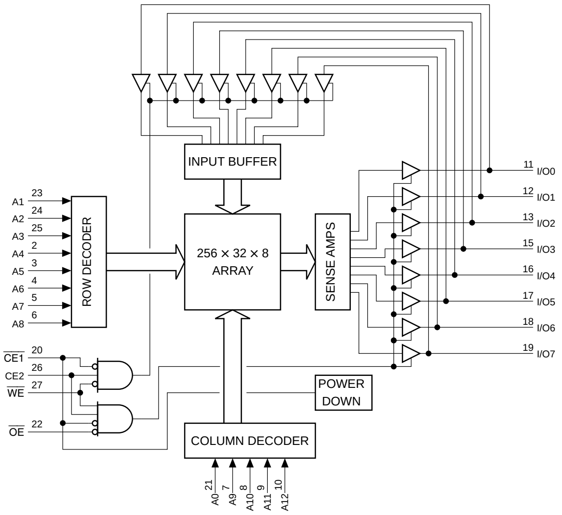

1 NC
2 A4
3 A5
4 A6
5 A7
6 A8
7 A9
8 A10
9 A11
10 A12
11 I/O0
12 I/O1
13 I/O2
14 GND
15 I/O3
16 I/O4
17 I/O5
18 I/O6
19 I/O7
20 CE1
21 A0
22 OE
23 A1
24 A2
25 A3
26 CE2
27 WE
28 VDD (+5V)


21 A0
23 A1
24 A2
25 A3
2 A4
3 A5
4 A6
5 A7
6 A8
7 A9
8 A10
9 A11
10 A12
26 CE2
20 CE1
22 OE
27 WE
I/O0 11
I/O1 12
I/O2 13
I/O3 15
I/O4 16
I/O5 17
I/O6 18
I/O7 19

A0 - A12 ; ADDRESS INPUTS
CE1, CE2 ; CHIP ENABLE INPUTS
I/O0 - I/O7 ; DATA INPUTS/OUTPUTS
OE ; OUTPUT ENABLE INPUT
WE ; WRITE ENABLE INPUT

(VDD = +5V)

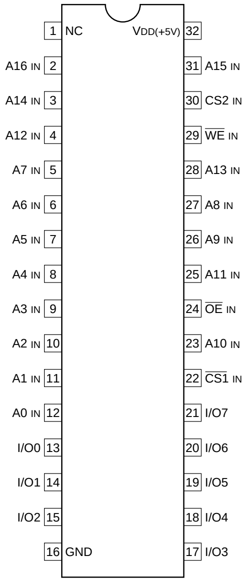
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	—	NC	8	I	A10	15	I/O	I/O3	22	I	OE
2	I	A4	9	I	A11	16	I/O	I/O4	23	I	A1
3	I	A5	10	I	A12	17	I/O	I/O5	24	I	A2
4	I	A6	11	I/O	I/O0	18	I/O	I/O6	25	I	A3
5	I	A7	12	I/O	I/O1	19	I/O	I/O7	26	I	CE2
6	I	A8	13	I/O	I/O2	20	I	CE1	27	I	WE
7	I	A9	14	—	GND	21	I	A0	28	—	VDD

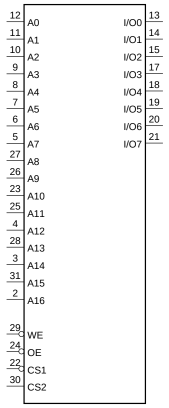

INPUT BUFFER
ROW DECODER
256 × 32 × 8 ARRAY
SENSE AMPS
POWER DOWN
COLUMN DECODER
A1 23
A2 24
A3 25
A4 2
A5 3
A6 4
A7 5
A8 6
CE1 20
CE2 26
WE 27
OE 22
A0 21
A9 7
A10 8
A11 9
A12 10
11 I/O0
12 I/O1
13 I/O2
15 I/O3
16 I/O4
17 I/O5
18 I/O6
19 I/O7

IDT71024S20Y-TL (INTEGRATED DEVICE TECHNOLOGY)

C-MOS 1M (128 × 8)BIT STATIC RAM

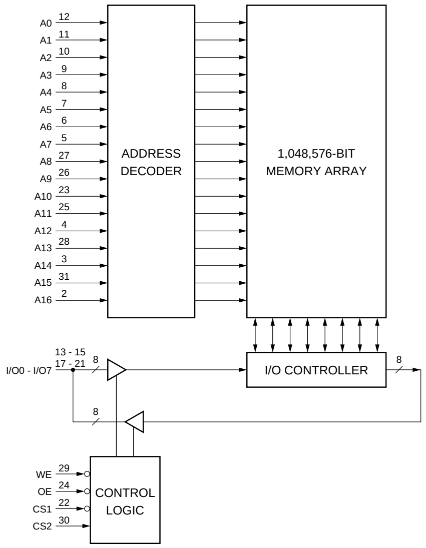
—TOP VIEW—


1 NC
2 A16 IN
3 A14 IN
4 A12 IN
5 A7 IN
6 A6 IN
7 A5 IN
8 A4 IN
9 A3 IN
10 A2 IN
11 A1 IN
12 A0 IN
13 I/O0
14 I/O1
15 I/O2
16 GND
17 I/O3
18 I/O4
19 I/O5
20 I/O6
21 I/O7
22 CS1 IN
23 A10 IN
24 OE IN
25 A11 IN
26 A9 IN
27 A8 IN
28 A13 IN
29 WE IN
30 CS2 IN
31 A15 IN
32 VDD(+5V)


12 A0
11 A1
10 A2
9 A3
8 A4
7 A5
6 A6
5 A7
27 A8
26 A9
23 A10
25 A11
4 A12
28 A13
3 A14
31 A15
2 A16
29 WE
24 OE
22 CS1
30 CS2
I/O0 13
I/O1 14
I/O2 15
I/O3 17
I/O4 18
I/O5 19
I/O6 20
I/O7 21

INPUTS				I/O	FUNCTION
WE	CS1	CS2	OE		
×	1	×	×	HI-Z	STANDBY
×	×	0	×	HI-Z	STANDBY
1	0	1	1	HI-Z	OUTPUTS DISABLED
1	0	1	0	DATA OUT	READ DATA
0	0	1	×	DATA IN	WRITE DATA

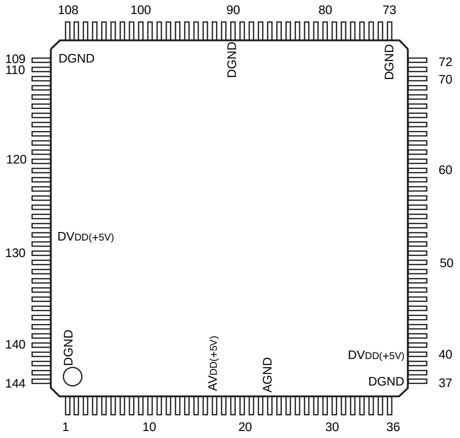
1 ; HIGH LEVEL
0 ; LOW LEVEL
× ; DON'T CARE
HI-Z ; HIGH IMPEDANCE


A0 12
A1 11
A2 10
A3 9
A4 8
A5 7
A6 6
A7 5
A8 27
A9 26
A10 23
A11 25
A12 4
A13 28
A14 3
A15 31
A16 2
ADDRESS DECODER
1,048,576-BIT MEMORY ARRAY
I/O CONTROLLER
I/O0 - I/O7
13 - 15
17 - 21
8
8
8
WE 29
OE 24
CS1 22
CS2 30
CONTROL LOGIC

HD81504FE (HITACHI)

C-MOS ISDNI INTERFACE

—TOP VIEW—



PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	—	DGND	37	—	DGND	73	—	DGND	109	—	DGND
2	O	EXHLTA/CDETP	38	O	XTAL	74	I/O	A18	110	I/O	OAD2
3		EXHOLT	39	I	EXTAL	75	I/O	A19	111	O	OAD3
4	I	L3CLK	40	—	DVDD	76	I/O	D7/TQ4	112	O	OAD4
5	I/O	LSW	41	O	CK12M/24M	77	I/O	D6/TQ3	113	O	OAD5
6	O	RBA	42	I	OSCSEL	78	I/O	D5/TQ2	114	O	OAD6
7	O	RBB	43	I	PD	79	I/O	D4/TQ1	115	O	OAD7
8	I	TBA	44	O	CPUCLK	80	I/O	D3/RQ4	116	O	OAD8
9	I	TBB	45	I/O	$\overline{\text{HALT}}$	81	I/O	D2/RQ3	117	O	OAD9
10	I/O	CK1536	46	O	ST	82	I/O	D1/RQ2	118	O	OAD10
11	I/O	CK8L	47	I	$\overline{\text{NMI}}$	83	I/O	D0/RQ1	119	O	OAD11
12	I/O	CK64K128K	48	I/O	$\overline{\text{INT0}}$	84	I	TEST0	120	O	OAD12
13	I	BCH CLK SEL	49	I	$\overline{\text{RESET}}$	85	I	TEST1	121	O	OAD13
14	I/O	RTIO	50	I/O	$\overline{\text{LIR}}$	86	I	TEST2	122	O	OAD14
15	I/O	RDIO	51	I/O	$\overline{\text{RD}}$	87	I	TEST3	123	O	OAD15
16	I/O	TDIO	52	I/O	$\overline{\text{WR}}$	88	O	$\overline{\text{RAMCS}}$	124	O	OAD16
17	O	RE	53	I/O	$\overline{\text{ME}}$	89	O	$\overline{\text{ROMCS}}$	125	O	OAD17
18	—	AVDD	54	I/O	$\overline{\text{IOE}}$	90	—	DGND	126	O	OAD18
19	I	LRA	55	I/O	A0	91	I/O	OD0	127	I/O	OAD19
20	I	LRB	56	I/O	A1	92	I/O	OD1	128	—	DVDD
21	O	LTA	57	I/O	A2	93	I/O	OD2	129	I	DMA/IO
22	O	LTB	58	I/O	A3	94	I/O	OD3	130	I	B/W
23	—	AGND	59	I/O	A4	95	I/O	OD4	131	I	CPU1
24	I	MODE M/S	60	I/O	A5	96	I/O	OD5	132	I	CPU2
25	I	RCVSEL	61	I/O	A6	97	I/O	OD6	133	O	$\overline{\text{INTR}}$
26	I	TXSEL	62	I/O	A7	98	I/O	OD7	134	I	$\overline{\text{CS}}$
27	O	CK4K	63	I/O	A8	99	I/O	OD8	135	O	$\overline{\text{UDS}}$
28	O	CK200	64	I/O	A9	100	I/O	OD9	136	I/O	$\overline{\text{DTA}}$
29	O	SYNC	65	I/O	A10	101	I/O	OD10	137	I/O	$\overline{\text{LDS}}$
30	I	ABIT/VDET	66	I/O	A11	102	I/O	OD11	138	I/O	$\overline{\text{AS}}$
31	I	L1ACT	67	I/O	A12	103	I/O	OD12	139	I/O	$\overline{\text{OWR}}$
32	I	L2ACT	68	I/O	A13	104	I/O	OD13	140	I/O	$\overline{\text{ORD}}$
33	O	$\overline{\text{SDO}}$	69	I/O	A14	105	I/O	OD14	141	O	$\overline{\text{M}}$/IO
34	O	$\overline{\text{WDT}}$	70	I/O	A15	106	I/O	OD15	142		BGA
35	I	CLKINH	71	I/O	A16	107	I/O	OAD0	143	I	HLTA/$\overline{\text{DREQ}}$
36	O	CLKSTP	72	I/O	A17	108	I/O	OAD1	144	O	HOLT/$\overline{\text{DRDY}}$

INPUT

ABIT/VDET ; ABITSET/ VDET
BCH CLK SEL ; B-CHANNEL CLOCK SELECT
B/W ; BYTE/ WORD SELECT
CLKINH ; CLOCK INHIBIT
CPU1, CPU2 ; CPU TYPE SELECT
$\overline{\text{CS}}$; CHIP SELECT
DMA/IO ; DMA/ IO MODE SELECT
$\overline{\text{DREQ}}$; REQUEST FOR TRANSMIT D-CHANNEL
EXTAL ; OSCILLATOR (12.288MHz OR 24.576MHz)
HLTA ; HOLD ACKNOWLEDGEMENT FROM UPPER CPU
L1ACT, L2ACT ; LAYER1, 2 ACTIVE
L3CLK ; UPPER CPU SYSTEM CLOCK
LRA, LRB ; LINE RECEIVE A, B
MODE M/S ; MASTER/ SLAVE MODE SELECT
$\overline{\text{NMI}}$; NON MASKABLE INTERRUPT
OSCSEL ; SYSTEM CLOCK SELECT (L: 12.288MHz/ H: 24.576MHz)
PD ; POWER DOWN SET
RCVSEL ; RECEIVE TIMING SELECT
$\overline{\text{RESET}}$; RESET
TBA, TBB ; TRANSMIT B-CHANNEL DATA A, B
TEST0 - TEST3 ; MODE SET
TQ1 - TQ4 ; TRANSMIT Q-BIT
TXSEL ; TEST MODE

OUTPUT

CDETP ; COLLISION DETECT
CK12M/24M ; 12MHz CLOCK
CK200 ; 200Hz CLOCK
CK4K ; 4kHz CLOCK
CLKSTP ; CLOCK STOP
CPUCLK ; SYSTEM CLOCK
$\overline{\text{DRDY}}$; READY FOR TRANSMIT D-CHANNEL
HOLT ; HOLD REQUEST TO UPPER CPU
$\overline{\text{INTR}}$; INTERRUPT REQUEST TO UPPER CPU
LTA, LTB ; LINE TRANSMIT A,B
$\overline{\text{M}}$/IO ; MEMORY REQUEST TO 8086 BUS
OAD3 - OAD18 ; ADDRESS BUS FOR UPPER CPU
$\overline{\text{RAMCS}}$; RAM CHIP SELECT
RBA, RBB ; RECEIVE B-CHANNEL DATA A,B
RE ; ECHO BIT RECEIVE
$\overline{\text{ROMCS}}$; ROM CHIP SELECT
RQ1 - RQ4 ; RECEIVE Q-BIT
$\overline{\text{SDO}}$; SIGNAL DETECT
ST ; STATUS
SYNC ; SYNCHRONIZATION
$\overline{\text{UDS}}$; UPPER DATA STROBE
$\overline{\text{WDT}}$; WATCH DOG TIMER
XTAL ; OSCILLATOR (12.288MHz OR 24.576MHz)

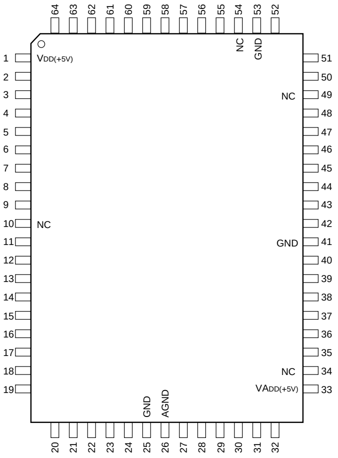
INPUT/OUTPUT

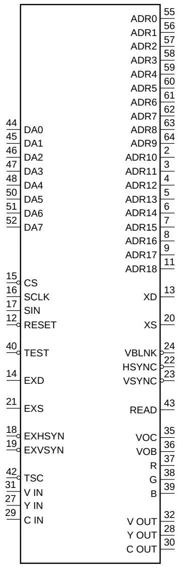
A0 - A19 ; ADDRESS BUS
$\overline{\text{AS}}$; ADDRESS STROBE
CK1536 ; 1.536MHz CLOCK
CK64K/128K ; B-CHANNEL BIT TIMING
CK8K ; B-CHANNEL FRAME TIMING
D0 - D7 ; DATA BUS
$\overline{\text{DTA}}$; DATA TRANSFER ACKNOWLEDGE
$\overline{\text{HALT}}$; HALT
$\overline{\text{INT0}}$; INTERRUPT 0
$\overline{\text{IOE}}$; I/O ENABLE
$\overline{\text{LDS}}$; LOWER DATA STROBE
$\overline{\text{LIR}}$; LOAD INSTRUCTION REGISTER
LSW ; LAYER1 ACTIVATION SWITCH
$\overline{\text{ME}}$; MEMORY ENABLE
OAD0 - OAD2, OAD19 ; ADDRESS BUS FOR UPPER CPU
OD0 - OD15 ; DATA BUS FOR UPPER CPU
$\overline{\text{ORD}}$; READ FOR UPPER CPU
$\overline{\text{OWR}}$; WRITE FOR UPPER CPU
$\overline{\text{RD}}$; READ
RDIO ; RECEIVE D-CHANNEL DATA
RTIO ; D-CHANNEL DATA RECEIVE/ TRANSMIT TIMING CLOCK
TDIO ; TRANSMIT D-CHANNEL DATA
$\overline{\text{WR}}$; WRITE

MB90076BPF-G-BND (FUJITSU)

C-MOS ON SCREEN DISPLAY CONTROLLER

—TOP VIEW—


64 63 62 61 60 59 58 57 56 55 54 53 52
NC
GND
VDD(+5V)
NC
NC
GND
NC
VADD(+5V)
GND
AGND
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33
20 21 22 23 24 25 26 27 28 29 30 31 32

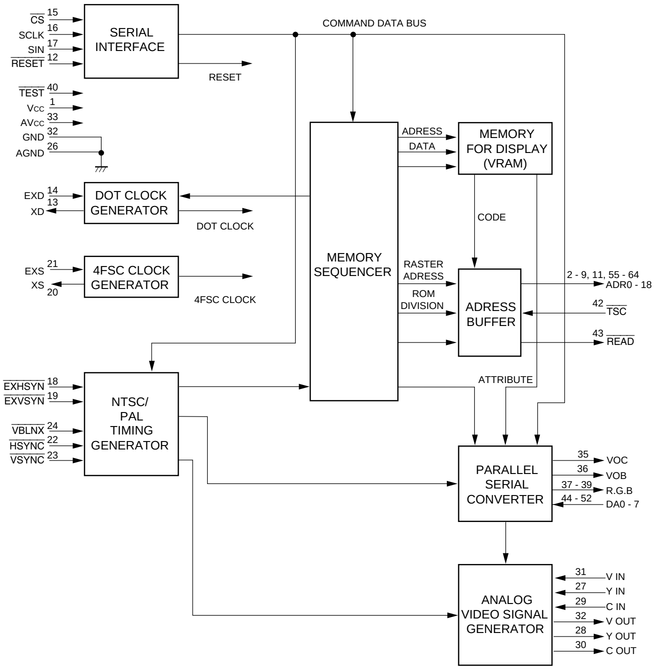

44 DA0
45 DA1
46 DA2
47 DA3
48 DA4
50 DA5
51 DA6
52 DA7
15 CS
16 SCLK
17 SIN
12 RESET
40 TEST
14 EXD
21 EXS
18 EXHSYN
19 EXVSYN
42 TSC
31 V IN
27 Y IN
29 C IN
ADR0 55
ADR1 56
ADR2 57
ADR3 58
ADR4 59
ADR5 60
ADR6 61
ADR7 62
ADR8 63
ADR9 64
ADR10 2
ADR11 3
ADR12 4
ADR13 5
ADR14 6
ADR15 7
ADR16 8
ADR17 9
ADR18 11
XD 13
XS 20
VBLNK 24
HSYNC 22
VSYNC 23
READ 43
VOC 35
VOB 36
R 37
G 38
B 39
V OUT 32
Y OUT 28
C OUT 30

INPUT

CIN	CHROMA SIGNAL
CS	CHIP SELECT
DA0 - DA7	CHARACTER DATA
EXD	LC CONNECTION
EXHSYN	EXT HORIZONTAL SYNC
EXVSYN	EXT VERTICAL SYNC
EXS	XC CONNECTION
RESET	RESET
SCLK	SERIAL CLOCK
SIN	SERIAL DATA
TEST	TEST
TSC	ADDRESS BUS AND READ DISABLE
VIN	COMPOSITE VIDEO
YIN	LUMINANCE SIGNAL

OUTPUT

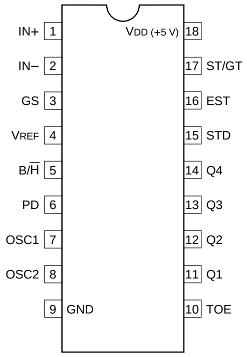
ADR0 - ADR18	ADRESS
B	B DATA
COUT	CHROMA SIGNAL
G	G DATA
HSYNC	HORIZONTAL / COMPOSITE SYNC
R	R DATA
READ	ROM DATA READ
VBLNK	VIRTICAL BLANKING
VOB	CHARACTER AND BACKGROUND SIGNAL
VOC	CHARACTER SIGNAL
VOUT	COMPOSITE VIDEO
VSYNC	VERTICAL SYNC
XD	DOT CLOCK OSC
XS	4 FSC OSC
YOUT	LUMINANCE SIGNAL


CS 15
SCLK 16
SIN 17
RESET 12
SERIAL INTERFACE
COMMAND DATA BUS
RESET
TEST 40
VCC 1
AVCC 33
GND 32
AGND 26
EXD 14
XD 13
DOT CLOCK GENERATOR
DOT CLOCK
EXS 21
XS 20
4FSC CLOCK GENERATOR
4FSC CLOCK
EXHSYN 18
EXVSYN 19
VBLNX 24
HSYNC 22
VSYNC 23
NTSC/ PAL TIMING GENERATOR
MEMORY SEQUENCER
ADRESS
DATA
MEMORY FOR DISPLAY (VRAM)
CODE
RASTER ADRESS
ROM DIVISION
ADRESS BUFFER
2 - 9, 11, 55 - 64 ADR0 - 18
42 TSC
43 READ
ATTRIBUTE
PARALLEL SERIAL CONVERTER
35 VOC
36 VOB
37 - 39 R.G.B
44 - 52 DA0 - 7
ANALOG VIDEO SIGNAL GENERATOR
31 V IN
27 Y IN
29 C IN
32 V OUT
28 Y OUT
30 C OUT

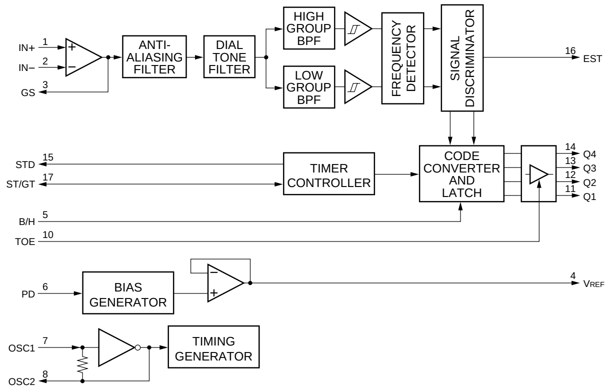
LC7385M (SANYO)

C-MOS DTMF RECEIVER

—TOP VIEW—


IN+ 1
IN– 2
GS 3
VREF 4
B/H 5
PD 6
OSC1 7
OSC2 8
9 GND
VDD (+5 V) 18
17 ST/GT
16 EST
15 STD
14 Q4
13 Q3
12 Q2
11 Q1
10 TOE

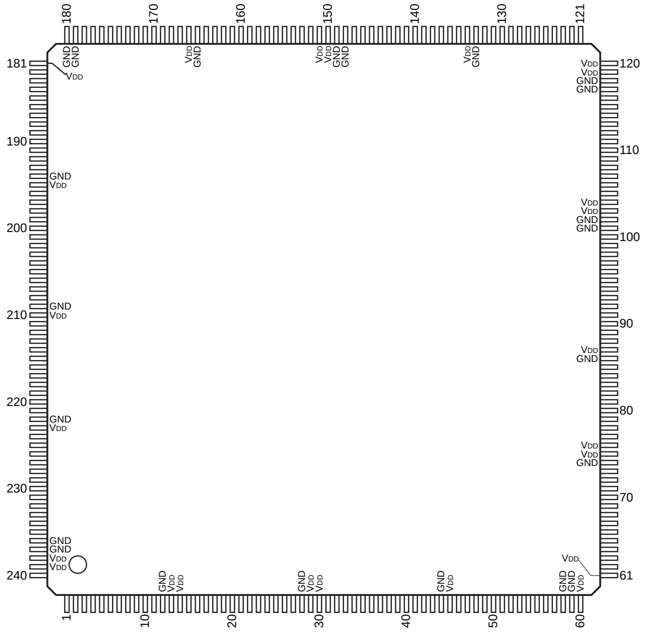
EST	EARLY STEERING OUTPUT
GS	GAIN SELECT FOR FEEDBACK RESISTOR
IN+	NON-INVERTING INPUT OF OPERATIONAL AMPLIFIER
IN–	INVERTING INPUT OF OPERATIONAL AMPLIFIER
OSC1	CRYSTAL OSCILLATOR INPUT
OSC2	CRYSTAL OSCILLATOR OUTPUT
Q1 - Q4	THREE-STATE DATA OUTPUT
STD	DELAYED STEERING OUTPUT
ST/GT	STEERING INPUT/GUARD TIME OUTPUT
TOE	THREE-STATE OUTPUT ENABLE INPUT
VREF	REFERENCE VOLTAGE OUTPUT


IN+ 1
IN– 2
GS 3
ANTI-ALIASING FILTER
DIAL TONE FILTER
HIGH GROUP BPF
LOW GROUP BPF
FREQUENCY DETECTOR
SIGNAL DISCRIMINATOR
16 EST
STD 15
ST/GT 17
TIMER CONTROLLER
CODE CONVERTER AND LATCH
14 Q4
13 Q3
12 Q2
11 Q1
B/H 5
TOE 10
PD 6
BIAS GENERATOR
4 VREF
OSC1 7
OSC2 8
TIMING GENERATOR

IIT3103AKAB (IIT)

C-MOS SINGLE CHIP VIDEO CODEC AND MULTIMEDIA COMMUNICATIONS PROCESSOR

—TOP VIEW—



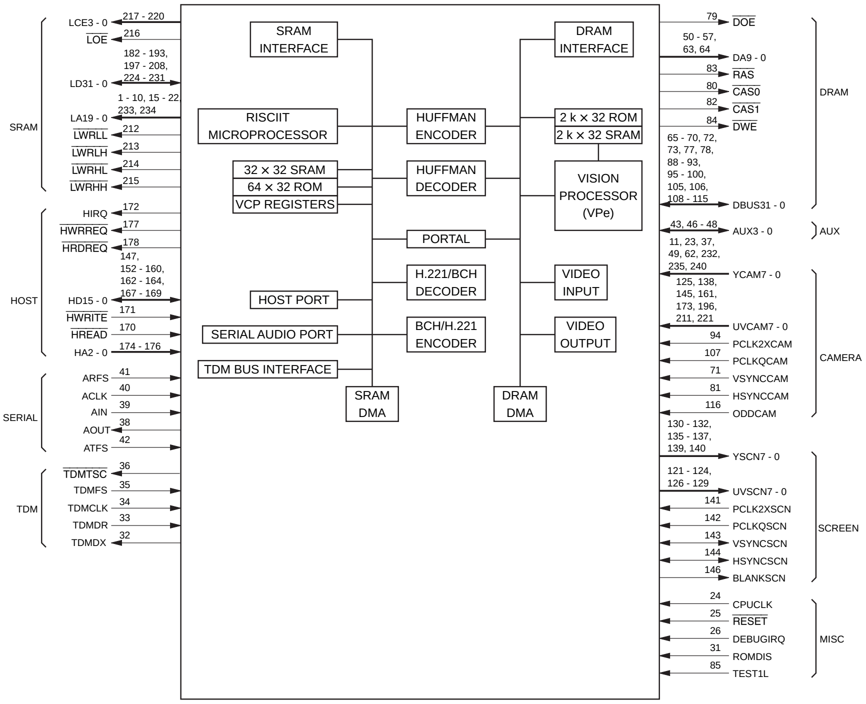
(V_{DD} = +5V)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	O	LA17	41	I	ARFS	81	I	HSYNCCAM	121	O	UVSCN0	161	I	UVCAM3	201	I/O	LD4
2	O	LA16	42	I	ATFS	82	O	$\overline{\text{CAS1}}$	122	O	UVSCN1	162	I/O	HD10	202	I/O	LD12
3	O	LA15	43	I/O	AUX0	83	O	$\overline{\text{RAS}}$	123	O	UVSCN2	163	I/O	HD11	203	I/O	LD20
4	O	LA14	44	—	GND	84	O	$\overline{\text{DWE}}$	124	O	UVSCN3	164	I/O	HD12	204	I/O	LD28
5	O	LA13	45	—	V_{DD}	85	I	TEST1L	125	I	UVCAM0	165	—	GND	205	I/O	LD5
6	O	LA12	46	I/O	AUX1	86	—	GND	126	O	UVSCN4	166	—	V_{DD}	206	I/O	LD13
7	O	LA11	47	I/O	AUX2	87	—	V_{DD}	127	O	UVSCN5	167	I/O	HD13	207	I/O	LD21
8	O	LA10	48	I/O	AUX3	88	I/O	DBUS5	128	O	UVSCN6	168	I/O	HD14	208	I/O	LD29
9	O	LA9	49	I	YCAM6	89	I/O	DBUS21	129	O	UVSCN7	169	I/O	HD15	209	—	GND
10	O	LA8	50	O	DA0	90	I/O	DBUS6	130	O	YSCN0	170	I	$\overline{\text{HREAD}}$	210	—	V_{DD}
11	I	YCAM3	51	O	DA1	91	I/O	DBUS22	131	O	YSCN1	171	I	$\overline{\text{HWRITE}}$	211	I	UVCAM6
12	—	GND	52	O	DA2	92	I/O	DBUS7	132	O	YSCN2	172	O	HIRQ	212	O	$\overline{\text{LWRLL}}$
13	—	V_{DD}	53	O	DA3	93	I/O	DBUS23	133	—	GND	173	I	UVCAM4	213	O	$\overline{\text{LWRLH}}$
14	—	V_{DD}	54	O	DA4	94	I	PCLK2XCAM	134	—	V_{DD}	174	I	HA0	214	O	$\overline{\text{LWRHL}}$
15	O	LA7	55	O	DA5	95	I/O	DBUS8	135	O	YSCN3	175	I	HA1	215	O	$\overline{\text{LWRHH}}$
16	O	LA6	56	O	DA6	96	I/O	DBUS24	136	O	YSCN4	176	I	HA2	216	O	$\overline{\text{LOE}}$
17	O	LA5	57	O	DA7	97	I/O	DBUS9	137	O	YSCN5	177	O	$\overline{\text{HWRREQ}}$	217	O	$\overline{\text{LCE0}}$
18	O	LA4	58	—	GND	98	I/O	DBUS25	138	I	UVCAM1	178	O	$\overline{\text{HRDREQ}}$	218	O	$\overline{\text{LCE1}}$
19	O	LA3	59	—	GND	99	I/O	DBUS10	139	O	YSCN6	179	—	GND	219	O	$\overline{\text{LCE2}}$
20	O	LA2	60	—	V_{DD}	100	I/O	DBUS26	140	O	YSCN7	180	—	GND	220	O	$\overline{\text{LCE3}}$
21	O	LA1	61	—	V_{DD}	101	—	GND	141	I	PCLK2XSCN	181	—	V_{DD}	221	I	UVCAM7
22	O	LA0	62	I	YCAM7	102	—	GND	142	I	PCLKQSCN	182	I/O	LD0	222	—	GND
23	I	YCAM4	63	O	DA8	103	—	V_{DD}	143	I/O	VSYNCSCN	183	I/O	LD8	223	—	V_{DD}
24	I	CPUCLK	64	O	DA9	104	—	V_{DD}	144	I/O	HSYNCSCN	184	I/O	LD16	224	I/O	LD6
25	I	$\overline{\text{RESET}}$	65	I/O	DBUS0	105	I/O	DBUS11	145	I	UVCAM2	185	I/O	LD24	225	I/O	LD14
26	I	DEBUGIRQ	66	I/O	DBUS16	106	I/O	DBUS27	146	O	BLANKSCN	186	I/O	LD1	226	I/O	LD22
27	O	TEST2	67	I/O	DBUS1	107	I	PCLKQCAM	147	I/O	HD0	187	I/O	LD9	227	I/O	LD30
28	—	GND	68	I/O	DBUS17	108	I/O	DBUS12	148	—	GND	188	I/O	LD17	228	I/O	LD7
29	—	V_{DD}	69	I/O	DBUS2	109	I/O	DBUS28	149	—	GND	189	I/O	LD25	229	I/O	LD15
30	—	V_{DD}	70	I/O	DBUS18	110	I/O	DBUS13	150	—	V_{DD}	190	I/O	LD2	230	I/O	LD23
31	I	ROMDIS	71	I	VSYNCCAM	111	I/O	DBUS29	151	—	V_{DD}	191	I/O	LD10	231	I/O	LD31
32	O	TDMDX	72	I/O	DBUS3	112	I/O	DBUS14	152	I/O	HD1	192	I/O	LD18	232	I	YCAM0
33	I	TDMDR	73	I/O	DBUS19	113	I/O	DBUS30	153	I/O	HD2	193	I/O	LD26	233	O	LA19
34	I	TDMCLK	74	—	GND	114	I/O	DBUS15	154	I/O	HD3	194	—	GND	234	O	LA18
35	I	TDMFS	75	—	V_{DD}	115	I/O	DBUS31	155	I/O	HD4	195	—	V_{DD}	235	I	YCAM1
36	O	$\overline{\text{TDMTSC}}$	76	—	V_{DD}	116	I	ODDCAM	156	I/O	HD5	196	I	UVCAM5	236	—	GND
37	I	YCAM5	77	I/O	DBUS4	117	—	GND	157	I/O	HD6	197	I/O	LD3	237	—	GND
38	O	AOUT	78	I/O	DBUS20	118	—	GND	158	I/O	HD7	198	I/O	LD11	238	—	V_{DD}
39	I	AIN	79	O	$\overline{\text{DOE}}$	119	—	V_{DD}	159	I/O	HD8	199	I/O	LD19	239	—	V_{DD}
40	I	ACLK	80	O	$\overline{\text{CAS0}}$	120	—	V_{DD}	160	I/O	HD9	200	I/O	LD27	240	I	YCAM2

INPUT
ACLK ; AUDIO PORT SERIAL CLOCK
AIN ; AUDIO PORT SERIAL DATA
ARFS ; AUDIO PORT RECEIVE FRAME SYNC
ATFS ; AUDIO PORT TRANSMIT FRAME SYNC
CPUCLK ; RISC AND SYSTEM CLOCK
DEBUGIRQ ; SYSTEM DEBUG INTERRUPT
HA0 - HA2 ; HOST ADDRESS BUS
HREAD ; HOST READ
HSYNCCAM ; HORIZONTAL SYNC FOR CAMERA VIDEO PORT
HWRITE ; HOST WRITE
ODDCAM ; ODD/EVEN FIELD SELECT FOR CAMERA VIDEO PORT
PCLK2XCAM; PIXEL CLOCK ; TWO TIMES THE ACTUAL PIXEL CLOCK FOR CAMERA VIDEO PORT
PCLK2XSCN; PIXEL CLOCK ; TWO TIMES THE ACTUAL PIXEL CLOCK FOR SCREEN VIDEO PORT
PCLKQCAM ; PIXEL CLOCK QUALIFIER IN FOR CAMERA VIDEO PORT
PCLKQSCN ; PIXEL CLOCK QUALIFIER IN FOR SCREEN VIDEO PORT
RESET ; SYSTEM RESET
ROMDIS ; DISABLE THE INTERNAL BOOT ROM AND BOOT FROM EXTERNAL ROM LOCATED AT LCE = 0 × 03
TDMCLK ; TDM BUS SERIAL CLOCK
TDMDR ; TDM BUS SERIAL DATA RECEIVE
TDMFS ; TDM BUS FRAME SYNC
TEST1L ; TEST
UVCAM0 - 7 ; UV CHROMINANCE DATA BUS FOR CAMERA VIDEO PORT
VSYNCCAM ; VERTICAL SYNC FOR CAMERA VIDEO PORT
YCAM0 - 7 ; Y LUMINANCE DATA BUS FOR CAMERA VIDEO PORT

OUTPUT
AOUT ; AUDIO PORT SERIAL DATA
BLANKSCN ; BLANKING FOR SCREEN VIDEO PORT
CAS0 ; REFERENCE DRAM COLUMN ADDRESS STROBE BANK 0
CAS1 ; REFERENCE DRAM COLUMN ADDRESS STROBE BANK 1
DA0 - 9 ; REFERENCE DRAM MULTIPLEXED ADDRESS
DOE ; REFERENCE DRAM OUTPUT ENABLE
DWE ; REFERENCE DRAM WRITE ENABLE
HIRQ ; HOST INTERRUPT REQUEST
HRDREQ ; HOST DMA CHANNEL READ REQUEST
HWRREQ ; HOST DMA CHANNEL WRITE REQUEST
LA0 - 19 ; RISC PORT ADDRESS BUS
LCE0 - 3 ; RISC PORT CHIP ENABLE
LOE ; RISC PORT OUTPUT ENABLE
LWRHH ; RISC PORT WRITE ENABLE BYTE 3
LWRHL ; RISC PORT WRITE ENABLE BYTE 2
LWRLH ; RISC PORT WRITE ENABLE BYTE 1
LWRLL ; RISC PORT WRITE ENABLE BYTE 0
RAS ; REFERENCE DRAM ROW ADDRESS STROBE
TDMDX ; TDM BUS SERIAL DATA TRANSMIT
TDMTSC ; TDM BUS TRISTATE CONTROL
TEST2 ; TEST
UVSCN0 - 7 ; UV CHROMINANCE DATA BUS FOR SCREEN VIDEO PORT
YSCN0 - 7 ; Y LUMINANCE DATA BUS FOR SCREEN VIDEO PORT

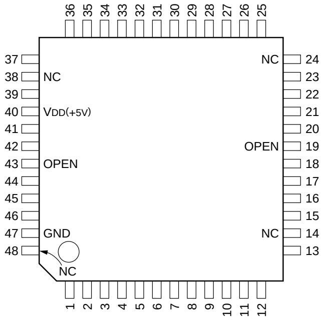
INPUT/OUTPUT
AUX0 - 3 ; AUXILIARY CONTROL LINES
DBUS0 - 31 ; REFERENCE DRAM DATA BUS
HD0 - 15 ; HOST DATA BUS
HSYNCSCN ; HORIZONTAL SYNC FOR SCREEN VIDEO PORT
LD0 - 31 ; RISC PORT DATA BUS
VSYNCSCN ; VERTICAL SYNC FOR SCREEN VIDEO PORT


SRAM
LCE3 - 0
217 - 220
LOE
216
182 - 193,
197 - 208,
224 - 231
LD31 - 0
1 - 10, 15 - 22,
233, 234
LA19 - 0
LWRLL
212
LWRLH
213
LWRHL
214
LWRHH
215
HOST
HIRQ
172
HWRREQ
177
HRDREQ
178
147,
152 - 160,
162 - 164,
167 - 169
HD15 - 0
HWRITE
171
HREAD
170
HA2 - 0
174 - 176
SERIAL
ARFS
41
ACLK
40
AIN
39
AOUT
38
ATFS
42
TDM
TDMTSC
36
TDMFS
35
TDMCLK
34
TDMDR
33
TDMDX
32
SRAM INTERFACE
RISCIIT MICROPROCESSOR
32 × 32 SRAM
64 × 32 ROM
VCP REGISTERS
HOST PORT
SERIAL AUDIO PORT
TDM BUS INTERFACE
SRAM DMA
HUFFMAN ENCODER
HUFFMAN DECODER
PORTAL
H.221/BCH DECODER
BCH/H.221 ENCODER
DRAM DMA
DRAM INTERFACE
2 k × 32 ROM
2 k × 32 SRAM
VISION PROCESSOR (VPe)
VIDEO INPUT
VIDEO OUTPUT
79
DOE
50 - 57,
63, 64
DA9 - 0
83
RAS
80
CAS0
82
CAS1
84
DWE
65 - 70, 72,
73, 77, 78,
88 - 93,
95 - 100,
105, 106,
108 - 115
DBUS31 - 0
DRAM
43, 46 - 48
AUX3 - 0
AUX
11, 23, 37,
49, 62, 232,
235, 240
YCAM7 - 0
125, 138,
145, 161,
173, 196,
211, 221
UVCAM7 - 0
94
PCLK2XCAM
107
PCLKQCAM
71
VSYNCCAM
81
HSYNCCAM
116
ODDCAM
CAMERA
130 - 132,
135 - 137,
139, 140
YSCN7 - 0
121 - 124,
126 - 129
UVSCN7 - 0
141
PCLK2XSCN
142
PCLKQSCN
143
VSYNCSCN
144
HSYNCSCN
146
BLANKSCN
SCREEN
24
CPUCLK
25
RESET
26
DEBUGIRQ
31
ROMDIS
85
TEST1L
MISC

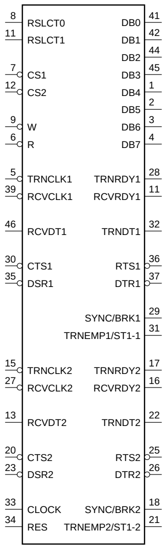
MB89371APF (FUJITSU)

C-MOS DUAL SERIAL DATA TRANSMITTER / RECEIVER UNIT

—TOP VIEW—


36 35 34 33 32 31 30 29 28 27 26 25
37 38 39 40 41 42 43 44 45 46 47 48
24 23 22 21 20 19 18 17 16 15 14 13
1 2 3 4 5 6 7 8 9 10 11 12
NC
NC
VDD(+5V)
OPEN
OPEN
GND
NC
NC

NC ; NON CONNECT TERMINAL (OPEN)
OPEN ; NEVER CONNECT TERMINAL


8 RSLCT0
11 RSLCT1
7 CS1
12 CS2
9 W
6 R
5 TRNCLK1
39 RCVCLK1
46 RCVDT1
30 CTS1
35 DSR1
15 TRNCLK2
27 RCVCLK2
13 RCVDT2
20 CTS2
23 DSR2
33 CLOCK
34 RES
DB0 41
DB1 42
DB2 44
DB3 45
DB4 1
DB5 2
DB6 3
DB7 4
TRNRDY1 28
RCVRDY1 11
TRNDT1 32
RTS1 36
DTR1 37
SYNC/BRK1 29
TRNEMP1/ST1-1 31
TRNRDY2 17
RCVRDY2 16
TRNDT2 22
RTS2 25
DTR2 26
SYNC/BRK2 18
TRNEMP2/ST1-2 21

(V_{DD} = +5V)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I/O	DB4	17	O	TRNRDY2	33	I	CLOCK
2	I/O	DB5	18	I/O	SYNC/BRK2	34	I	RST
3	I/O	DB6	19	—	OPEN	35	I	DSR1
4	I/O	DB7	20	I	CTS2	36	O	RTS1
5	I	TRNCLK1	21	O	TRNEMP2/ST1-2	37	I	DTR1
6	I	W	22	O	TRNDT2	38	—	NC
7	I	CS1	23	O	DSR2	39	I	RCVCLK1
8	I	RSLCT0	24	—	NC	40	—	V_{DD}
9	I	R	25	O	RTS2	41	I/O	DB0
10	O	RCVRDY1	26	O	DTR2	42	I/O	DB1
11	I	RSLCT1	27	I	RCVCLK2	43	—	OPEN
12	I	CS2	28	O	TRNRDY1	44	I/O	DB2
13	I	RCVDT2	29	I/O	SYNC/BRK1	45	I/O	DB3
14	—	NC	30	I	CTS1	46	I	RCVDT1
15	I	TRNCLK2	31	O	TRNEMP1/ST1-1	47	—	GND
16	O	RCVRDY2	32	O	TRNDT1	48	—	NC

INPUT

CLOCK ; CLOCK (4,9152MHz) FOR REFERENCE OF TIMING.
CSn ; CHIP SELECT OF CHANNELn. (n = 1 OR 2)
CTSn ; CLEAR TO SEND OF CHANNELn. (n = 1 OR 2)
DSRn ; DATA SET READY OF CHANNELn. (n = 1 OR 2)
R ; READ ENABLE
RCVCLKn ; RECEIVER CLOCK OF CHANNELn. (n = 1 OR 2)
RCVDTn ; RECEIVE DATA OF CHANNELn. (n = 1 OR 2)
RSLCTn ; REGISTERS SELECT LINEn. (n = 0 AND 1)
RST ; RESET PULSE
TRNCLKn ; TRANSMITTER CLOCK OF CHANNELn. (n = 1 OR 2)
W ; WRITE ENABLE

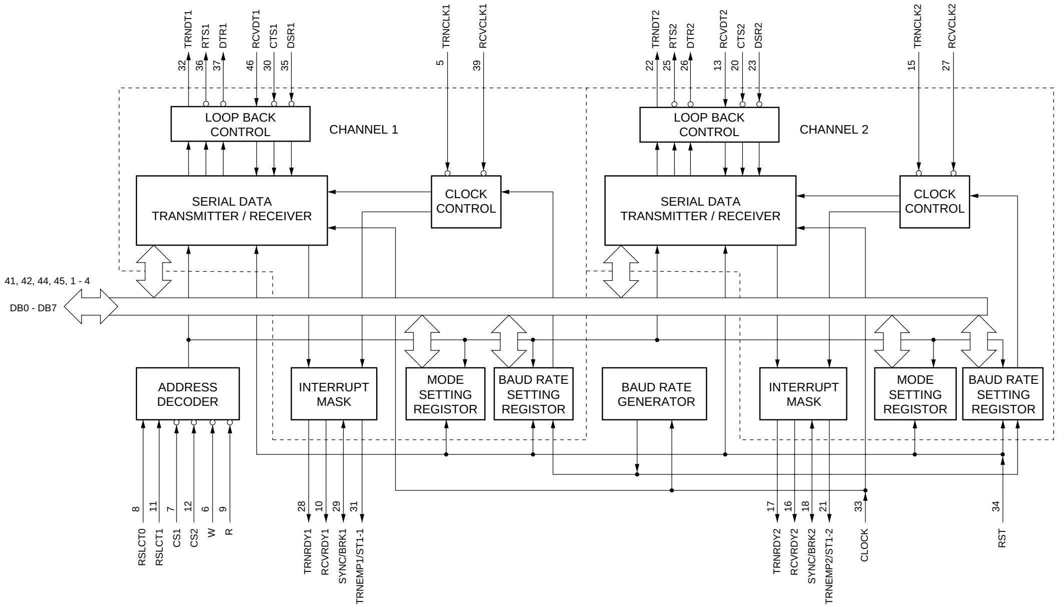
OUTPUT

DTRn ; DATA TERMINAL READY OF CHANNELn. (n = 1 OR 2)
RCVRDYn ; RECEIVER READY OF CHANNELn. (n = 1 OR 2)
RTSn ; REQUEST TO SEND OF CHANNELn. (n = 1 OR 2)
TRNDTn ; TRANSMIT DATA OF CHANNELn. (n = 1 OR 2)
TRNEMPn/ST1-n ; TRANSMITTER EMPTY / BAUD RATE CLOCK OUT OF CHANNELn. (n = 1 OR 2)
TRNRDYn ; TRANSMIT READY OF CHANNELn. (n = 1 OR 2)

INPUT/OUTPUT

DBn ; DATA BUS LINEn. (n = 0 TO 7)
SYNC/BRKn ; SYNCHRONIZATION CHARACTOR / BREAK CODE DETECT OF CHANNELn. (n = 1 OR 2)

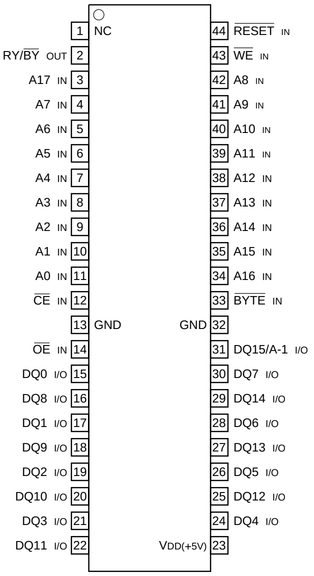
NC ; NON CONNECT TERMINAL (OPEN)
OPEN ; NEVER CONNECT TERMINAL

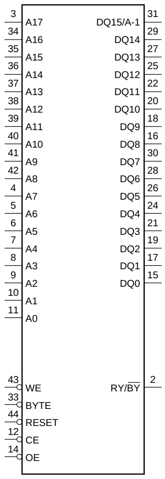

TRNDT1 32
RTS1 36
DTR1 37
RCVDT1 46
CTS1 30
DSR1 35
TRNCLK1 5
RCVCLK1 39
TRNDT2 22
RTS2 25
DTR2 26
RCVDT2 13
CTS2 20
DSR2 23
TRNCLK2 15
RCVCLK2 27
LOOP BACK CONTROL
CHANNEL 1
SERIAL DATA TRANSMITTER / RECEIVER
CLOCK CONTROL
LOOP BACK CONTROL
CHANNEL 2
SERIAL DATA TRANSMITTER / RECEIVER
CLOCK CONTROL
41, 42, 44, 45, 1 - 4
DB0 - DB7
ADDRESS DECODER
INTERRUPT MASK
MODE SETTING REGISTOR
BAUD RATE SETTING REGISTOR
BAUD RATE GENERATOR
INTERRUPT MASK
MODE SETTING REGISTOR
BAUD RATE SETTING REGISTOR
8 RSLCT0
11 RSLCT1
7 CS1
12 CS2
6 W
9 R
28 TRNRDY1
10 RCVRDY1
29 SYNC/BRK1
31 TRNEMP1/ST1-1
17 TRNRDY2
16 RCVRDY2
18 SYNC/BRK2
21 TRNEMP2/ST1-2
33 CLOCK
34 RST

MBM29F400TA-12PFTN (FUJITSU)FLAT PACKAGE

C-MOS 4M (512K × 8/256K × 16)-BIT FLASH MEMORY

—TOP VIEW—


1 NC
RY/BY OUT 2
A17 IN 3
A7 IN 4
A6 IN 5
A5 IN 6
A4 IN 7
A3 IN 8
A2 IN 9
A1 IN 10
A0 IN 11
CE IN 12
13 GND
OE IN 14
DQ0 I/O 15
DQ8 I/O 16
DQ1 I/O 17
DQ9 I/O 18
DQ2 I/O 19
DQ10 I/O 20
DQ3 I/O 21
DQ11 I/O 22
44 RESET IN
43 WE IN
42 A8 IN
41 A9 IN
40 A10 IN
39 A11 IN
38 A12 IN
37 A13 IN
36 A14 IN
35 A15 IN
34 A16 IN
33 BYTE IN
GND 32
31 DQ15/A-1 I/O
30 DQ7 I/O
29 DQ14 I/O
28 DQ6 I/O
27 DQ13 I/O
26 DQ5 I/O
25 DQ12 I/O
24 DQ4 I/O
VDD(+5V) 23


3 A17
34 A16
35 A15
36 A14
37 A13
38 A12
39 A11
40 A10
41 A9
42 A8
4 A7
5 A6
6 A5
7 A4
8 A3
9 A2
10 A1
11 A0
43 WE
33 BYTE
44 RESET
12 CE
14 OE
DQ15/A-1 31
DQ14 29
DQ13 27
DQ12 25
DQ11 22
DQ10 20
DQ9 18
DQ8 16
DQ7 30
DQ6 28
DQ5 26
DQ4 24
DQ3 21
DQ2 19
DQ1 17
DQ0 15
RY/BY 2

INPUT

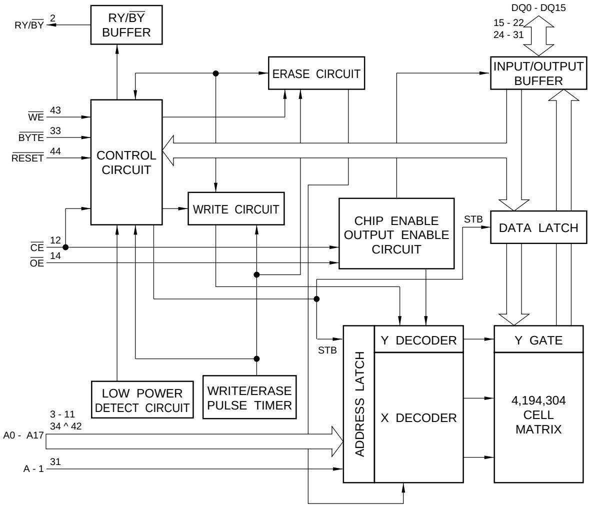
A0 - A17, A-1	;	ADDRESS
BYTE	;	8/16 BITS MODE SELECT
CE	;	CHIP ENABLE
OE	;	OUTPUT ENABLE
RESET	;	HARDWARE RESET
WE	;	WRITE ENABLE

OUTPUT

RY/BY	;	READY/BUSY

INPUT/OUTPUT

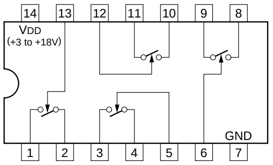
DQ0 - DQ15	;	DATA

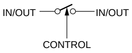

RY/BY 2
RY/BY BUFFER
DQ0 - DQ15
15 - 22
24 - 31
ERASE CIRCUIT
INPUT/OUTPUT BUFFER
WE 43
BYTE 33
RESET 44
CONTROL CIRCUIT
WRITE CIRCUIT
CHIP ENABLE OUTPUT ENABLE CIRCUIT
STB
DATA LATCH
CE 12
OE 14
STB
ADDRESS LATCH
Y DECODER
X DECODER
Y GATE
4,194,304 CELL MATRIX
LOW POWER DETECT CIRCUIT
WRITE/ERASE PULSE TIMER
3 - 11
34 ^ 42
A0 - A17
31
A - 1

MC14066BF (MOTOROLA)FLAT PACKAGE
TC4066BFHB-EL

C-MOS QUAD BILATERAL ANALOG SWITCH

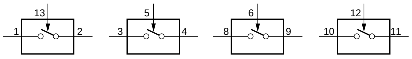
—TOP VIEW—


14
13
12
11
10
9
8
VDD
(+3 to +18V)
GND
1
2
3
4
5
6
7


IN/OUT
IN/OUT
CONTROL

CONTROL	SWITCH
0	OFF
1	ON

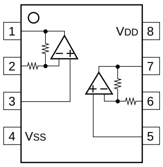
0 ; LOW LEVEL
1 ; HIGH LEVEL


13
1
2
5
3
4
6
8
9
12
10
11

MC14576CFEL (MOTOROLA)FLAT PACKAGE

C-MOS DUAL VIDEO AMPLIFIERS

—TOP VIEW—

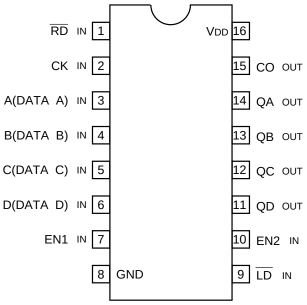

1
2
3
4 VSS
VDD 8
7
6
5

*VDD + | VSS | = +5 to +12V

MC74HC163AF (MOTOROLA)FLAT PACKAGE
SN74HC163ANS-E05
TC74VHC163F (TOSHIBA)FLAT PACKAGE
TC74VHC163F(EL)

C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER

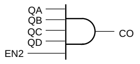
—TOP VIEW—


RD IN 1
CK IN 2
A(DATA A) IN 3
B(DATA B) IN 4
C(DATA C) IN 5
D(DATA D) IN 6
EN1 IN 7
8 GND
VDD 16
15 CO OUT
14 QA OUT
13 QB OUT
12 QC OUT
11 QD OUT
10 EN2 IN
9 LD IN

MODE SELECTION

CONTROL INPUTS				MODE
RD	LD	EN1	EN2	
0	×	×	×	RESET (SYNCHRONOUS)
1	0	×	×	PRESET (SYNCHRONOUS)
1	1	0	×	NO COUNT
1	1	×	0	NO COUNT
1	1	1	1	COUNT

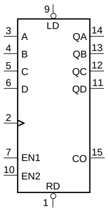
CARRY OUTPUT "CO"


QA
QB
QC
QD
EN2
CO

CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

NOTE:

TYPE	VDD
HC	+2 to +6V
AC/VHC	+2 to +5.5V
HCT/ACT/FCT	+5V


9
LD
3 A
4 B
5 C
6 D
QA 14
QB 13
QC 12
QD 11
2
7 EN1
10 EN2
CO 15
RD
1

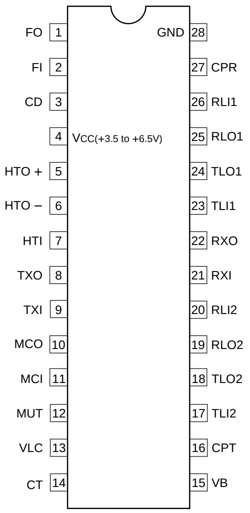
COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

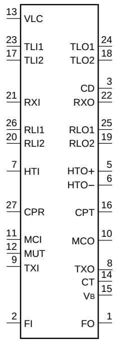
MC34118DW (MOTOROLA)
MC34118DW-R2

BI-POLAR SPEAKER-PHONE SYSTEM FOR TELEPHONE

—TOP VIEW—



FO 1
FI 2
CD 3
4 VCC(+3.5 to +6.5V)
HTO + 5
HTO − 6
HTI 7
TXO 8
TXI 9
MCO 10
MCI 11
MUT 12
VLC 13
CT 14
GND 28
27 CPR
26 RLI1
25 RLO1
24 TLO1
23 TLI1
22 RXO
21 RXI
20 RLI2
19 RLO2
18 TLO2
17 TLI2
16 CPT
15 VB



13 VLC
23 TLI1
17 TLI2
21 RXI
26 RLI1
20 RLI2
7 HTI
27 CPR
11 MCI
12 MUT
9 TXI
2 FI
TLO1 24
TLO2 18
CD 3
RXO 22
RLO1 25
RLO2 19
HTO+ 5
HTO− 6
CPT 16
MCO 10
TXO 8
CT 14
VB 15
FO 1

INPUT

FI	FILTER
HTI	FIRST HYBRID AMP
MCI	MICROPHONE AMP
MUT	MUTING
RLI1	LINE RECEIVE LEVEL DETECT
RLI2	MICROPHONE / SPEAKER RECEIVE LEVEL DETECT
RXI	RECEIVE ATTENUATOR AND DIAL TONE DETECT
TLI1	LINE TRANSMIT LEVEL DETECT
TLI2	MICROPHONE / SPEAKER TRANSMIT LEVEL DETECT
TXI	TRANSMIT ATTENUATOR
VLC	VOLUME CONTROL

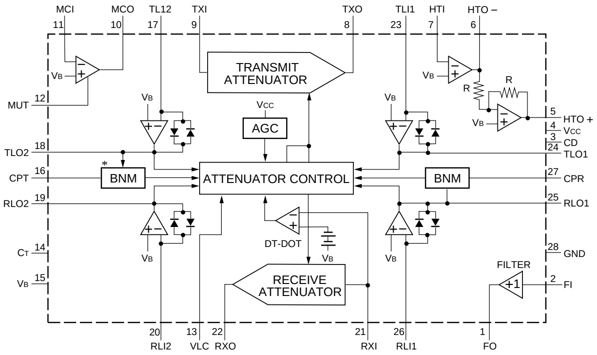
OUTPUT

CD	CHIP DISABLE
FO	FILTER
HTO+	SECOND HYBRID AMP
HTO−	FIRST HYBRID AMP
MCO	MICROPHONE AMP
RLO1	LINE RECEIVE LEVEL DETECT AND BNM
RLO2	MICROPHONE / SPEAKER RECEIVE LEVEL DETECT
RXO	RECEIVE ATTENUATOR
TLO1	LINE TRANSMIT LEVEL DETECT
TLO2	MICROPHONE / SPEAKER TRANSMIT LEVEL DETECT AND BNM
TXO	TRANSMIT ATTENUATOR
V_B	BIAS(≒V_{CC} / 2)

OTHERS

CPR	TIME CONSTANT FOR RECEIVE BNM
CPT	TIME CONSTANT FOR TRANSMIT BNM
CT	TIME CONSTANT FOR SWITCH RESPONSE

*BNM ; BACKGROUND NOISE MONITOR



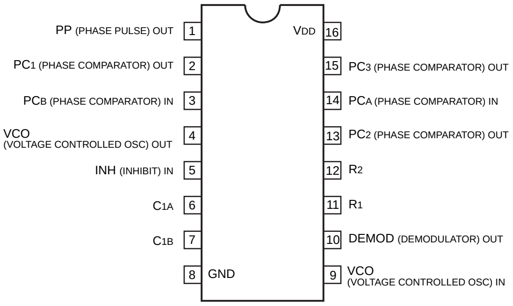
MCI 11
MCO 10
TL12 17
TXI 9
TXO 8
TLI1 23
HTI 7
HTO − 6
TRANSMIT ATTENUATOR
VB
R
MUT 12
VCC
AGC
5 HTO +
4 VCC
3 CD
24 TLO1
TLO2 18
*
CPT 16
BNM
ATTENUATOR CONTROL
BNM
27 CPR
RLO2 19
25 RLO1
DT-DOT
28 GND
CT 14
VB 15
RECEIVE ATTENUATOR
FILTER
+1
2 FI
20 RLI2
13 VLC
22 RXO
21 RXI
26 RLI1
1 FO

＊; BACKGROUND NOISE MONITOR

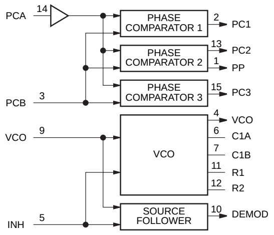
MM74HC4046M (NS)
MM74HC4046MX

C-MOS PHASE LOCKED LOOP

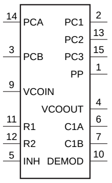
—TOP VIEW—



PP (PHASE PULSE) OUT 1
PC1 (PHASE COMPARATOR) OUT 2
PCB (PHASE COMPARATOR) IN 3
VCO (VOLTAGE CONTROLLED OSC) OUT 4
INH (INHIBIT) IN 5
C1A 6
C1B 7
8 GND
VDD 16
15 PC3 (PHASE COMPARATOR) OUT
14 PCA (PHASE COMPARATOR) IN
13 PC2 (PHASE COMPARATOR) OUT
12 R2
11 R1
10 DEMOD (DEMODULATOR) OUT
9 VCO (VOLTAGE CONTROLLED OSC) IN



PCA 14
PHASE COMPARATOR 1
2 PC1
PHASE COMPARATOR 2
13 PC2
1 PP
PHASE COMPARATOR 3
15 PC3
PCB 3
VCO 9
VCO
4 VCO
6 C1A
7 C1B
11 R1
12 R2
INH 5
SOURCE FOLLOWER
10 DEMOD

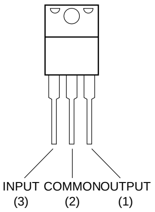


14 PCA
3 PCB
9 VCOIN
11 R1
12 R2
5 INH
PC1 2
PC2 13
PC3 15
PP 1
VCOOUT 4
C1A 6
C1B 7
DEMOD 10

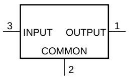
NJM7805FA (JRC)+5 V(1 A)
NJM7809FA (JRC)+9 V(1 A)

POSITIVE VOLTAGE REGULATOR

—FRONT VIEW—



INPUT (3)
COMMON (2)
OUTPUT (1)

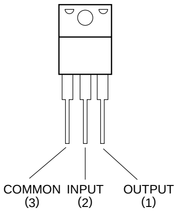


3 INPUT
OUTPUT 1
COMMON
2

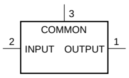
NJM7905FA (JRC)−5 V(1 A)
NJM7909FA (JRC)−9 V(1 A)

NEGATIVE VOLTAGE REGULATOR

—FRONT VIEW—



COMMON (3)
INPUT (2)
OUTPUT (1)

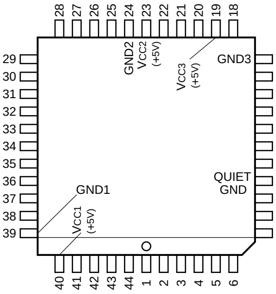


3
COMMON
2 INPUT
OUTPUT 1

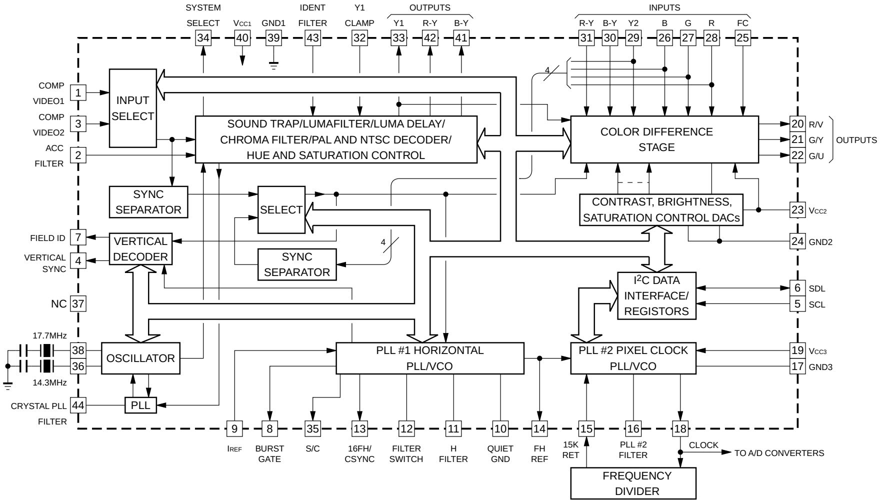
MC44011FN (MOTOROLA)FLAT PACKAGE

BUS CONTROLLED MULTISTANDARD VIDEO PROCESSOR

—TOP VIEW—


28 27 26 25 24 23 22 21 20 19 18
29 30 31 32 33 34 35 36 37 38 39
17 16 15 14 13 12 11 10 9 8 7
40 41 42 43 44 1 2 3 4 5 6
GND2
VCC2 (+5V)
VCC3 (+5V)
GND3
QUIET GND
GND1
VCC1 (+5V)

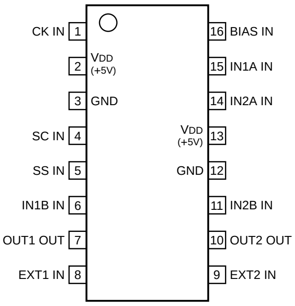
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I	COMP VIDEO1	23	—	VCC2
2	I	ACC FILTER	24	—	GND2
3	I	COMP VIDEO2	25	I	FC
4	O	VERTICAL SYNC	26	I	B
5	I	SCL	27	I	G
6	O	SDL	28	I	R
7	O	FIELD ID	29	I	Y2
8	O	BURST GATE	30	I	B-Y
9	I	IREF	31	I	R-Y
10	—	QUIET GND	32	I	Y1 CLAMP
11	I	H FILTER	33	O	Y1
12	I	FILTER SWITCH	34	O	SYSTEM SELECT
13	O	16FH/C SYNC	35	O	S/C
14	O	FH REF	36	I	XTAL2 (17.7 MHz)
15	I	15K RET	37	—	NC
16	I	PLL #2 FILTER	38	I	XTAL1 (14.3 MHz)
17	—	GND3	39	—	GND1
18	O	CLOCK	40	—	VCC1
19	—	VCC3	41	O	B-Y
20	O	R/V	42	O	R-Y
21	O	G/Y	43	I	IDENT FILTER
22	O	B/U	44	I	CRYSTAL PLL FILTER

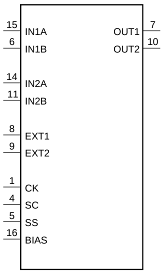

SYSTEM SELECT 34
VCC1 40
GND1 39
IDENT FILTER 43
Y1 CLAMP 32
OUTPUTS
Y1 33
R-Y 42
B-Y 41
INPUTS
R-Y 31
B-Y 30
Y2 29
B 26
G 27
R 28
FC 25
COMP VIDEO1 1
COMP VIDEO2 3
ACC FILTER 2
INPUT SELECT
SOUND TRAP/LUMAFILTER/LUMA DELAY/ CHROMA FILTER/PAL AND NTSC DECODER/ HUE AND SATURATION CONTROL
COLOR DIFFERENCE STAGE
20 R/V
21 G/Y
22 B/U
OUTPUTS
SYNC SEPARATOR
SELECT
CONTRAST, BRIGHTNESS, SATURATION CONTROL DACs
23 VCC2
24 GND2
FIELD ID 7
VERTICAL SYNC 4
VERTICAL DECODER
SYNC SEPARATOR
4
I2C DATA INTERFACE/ REGISTORS
6 SDL
5 SCL
NC 37
17.7MHz
38
36
14.3MHz
OSCILLATOR
PLL #1 HORIZONTAL PLL/VCO
PLL #2 PIXEL CLOCK PLL/VCO
19 VCC3
17 GND3
CRYSTAL PLL FILTER 44
PLL
9 IREF
8 BURST GATE
35 S/C
13 16FH/ CSYNC
12 FILTER SWITCH
11 H FILTER
10 QUIET GND
14 FH REF
15 15K RET
16 PLL #2 FILTER
18 CLOCK
TO A/D CONVERTERS
FREQUENCY DIVIDER

MC44140DWR2 (MOTOROLA)FLAT PACKAGE

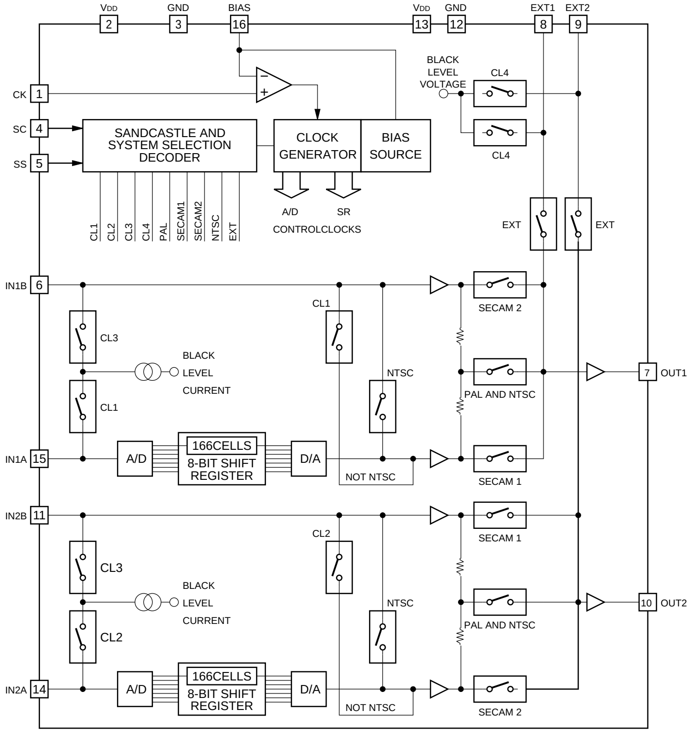
C-MOS CHROMA DELAY LINE

—TOP VIEW—


CK IN 1
2 VDD (+5V)
3 GND
SC IN 4
SS IN 5
IN1B IN 6
OUT1 OUT 7
EXT1 IN 8
16 BIAS IN
15 IN1A IN
14 IN2A IN
13 VDD (+5V)
12 GND
11 IN2B IN
10 OUT2 OUT
9 EXT2 IN


15 IN1A
6 IN1B
14 IN2A
11 IN2B
8 EXT1
9 EXT2
1 CK
4 SC
5 SS
16 BIAS
OUT1 7
OUT2 10

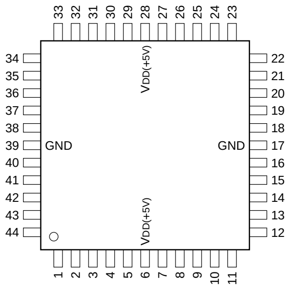
BIAS ; BIAS CURRENT INPUT
CK ; SYSTEM CLOCK INPUT
EXT1, 2 ; EXTARNAL R-Y (EXT1) AND B-Y (EXT2) INPUTS
IN1A, B ; R-Y INPUTS
IN2A, B ; B-Y INPUTS
OUT1, 2 ; R-Y (OUT1) AND B-Y (OUT2) OUTPUTS
SS ; SYSTEM SELECT INPUT
SC ; SANDCASTLE PULSE INPUT

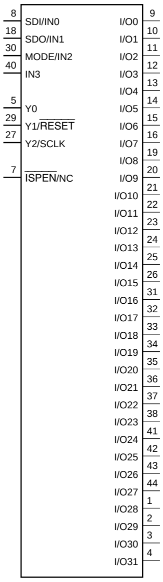

VDD 2
GND 3
BIAS 16
VDD 13
GND 12
EXT1 8
EXT2 9
BLACK LEVEL VOLTAGE
CL4
CL4
CK 1
SC 4
SS 5
SANDCASTLE AND SYSTEM SELECTION DECODER
CLOCK GENERATOR
BIAS SOURCE
CL1 CL2 CL3 CL4 PAL SECAM1 SECAM2 NTSC EXT
A/D
SR
CONTROLCLOCKS
EXT
EXT
IN1B 6
CL1
SECAM 2
CL3
BLACK LEVEL CURRENT
NTSC
CL1
PAL AND NTSC
7 OUT1
IN1A 15
A/D
166CELLS 8-BIT SHIFT REGISTER
D/A
NOT NTSC
SECAM 1
IN2B 11
SECAM 1
CL2
CL3
BLACK LEVEL CURRENT
NTSC
PAL AND NTSC
10 OUT2
CL2
IN2A 14
A/D
166CELLS 8-BIT SHIFT REGISTER
D/A
NOT NTSC
SECAM 2

PLSI2032-80LJ (LATTICE)

C-MOS HIGH-DENSITY PROGRAMMABLE LOGIC

—TOP VIEW—


33 32 31 30 29 28 27 26 25 24 23
34 35 36 37 38 39 40 41 42 43 44
22 21 20 19 18 17 16 15 14 13 12
1 2 3 4 5 6 7 8 9 10 11
VDD(+5V)
GND
GND
VDD(+5V)


8 SDI/IN0
18 SDO/IN1
30 MODE/IN2
40 IN3
5 Y0
29 Y1/RESET
27 Y2/SCLK
7 ISPEN/NC
I/O0 9
I/O1 10
I/O2 11
I/O3 12
I/O4 13
I/O5 14
I/O6 15
I/O7 16
I/O8 19
I/O9 20
I/O10 21
I/O11 22
I/O12 23
I/O13 24
I/O14 25
I/O15 26
I/O16 31
I/O17 32
I/O18 33
I/O19 34
I/O20 35
I/O21 36
I/O22 37
I/O23 38
I/O24 41
I/O25 42
I/O26 43
I/O27 44
I/O28 1
I/O29 2
I/O30 3
I/O31 4

INPUT

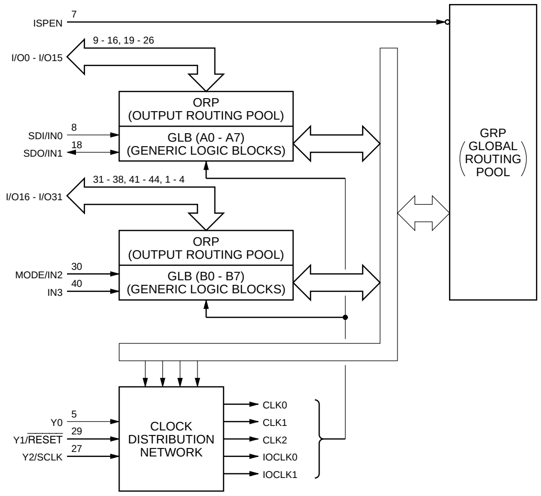
IN0 - IN3	;	INPUT
ISPEN	;	IN-SYSTEM PROGRAMMING ENABLE
MODE	;	MODE
RESET	;	ACTIVE LOW (0) RESET
SCLK	;	SERIAL CLOCK
SDI	;	SERIAL DATA IN
Y0 - Y3	;	INPUT CLOCK

OUTPUT

SDO ; SERIAL DATA OUT

INPUT/OUTPUT

I/O0 - I/O31 ; INPUT/OUTPUT


ISPEN 7
I/O0 - I/O15
9 - 16, 19 - 26
ORP (OUTPUT ROUTING POOL)
SDI/IN0 8
SDO/IN1 18
GLB (A0 - A7) (GENERIC LOGIC BLOCKS)
I/O16 - I/O31
31 - 38, 41 - 44, 1 - 4
ORP (OUTPUT ROUTING POOL)
MODE/IN2 30
IN3 40
GLB (B0 - B7) (GENERIC LOGIC BLOCKS)
GRP (GLOBAL ROUTING POOL)
Y0 5
Y1/RESET 29
Y2/SCLK 27
CLOCK DISTRIBUTION NETWORK
CLK0
CLK1
CLK2
IOCLK0
IOCLK1

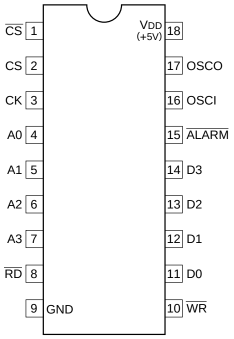
(VDD = +5V)

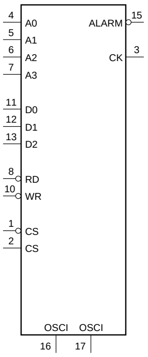
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I/O	I/O28	23	I/O	I/O12
2	I/O	I/O29	24	I/O	I/O13
3	I/O	I/O30	25	I/O	I/O14
4	I/O	I/O31	26	I/O	I/O15
5	I	Y0	27	I	Y2/SCLK
6	—	VDD	28	—	VDD
7	I	ISPEN/NC	29	I	Y1/RESET
8	I	SDI/IN0	30	I	MODE/IN2
9	I/O	I/O0	31	I/O	I/O16
10	I/O	I/O1	32	I/O	I/O17
11	I/O	I/O2	33	I/O	I/O18
12	I/O	I/O3	34	I/O	I/O19
13	I/O	I/O4	35	I/O	I/O20
14	I/O	I/O5	36	I/O	I/O21
15	I/O	I/O6	37	I/O	I/O22
16	I/O	I/O7	38	I/O	I/O23
17	—	GND	39	—	GND
18	I/O	SDO/IN1	40	I	IN3
19	I/O	I/O8	41	I/O	I/O24
20	I/O	I/O9	42	I/O	I/O25
21	I/O	I/O10	43	I/O	I/O26
22	I/O	I/O11	44	I/O	I/O27

RF5C15 (RICOH)FLAT PACKAGE
RF5C15-E2

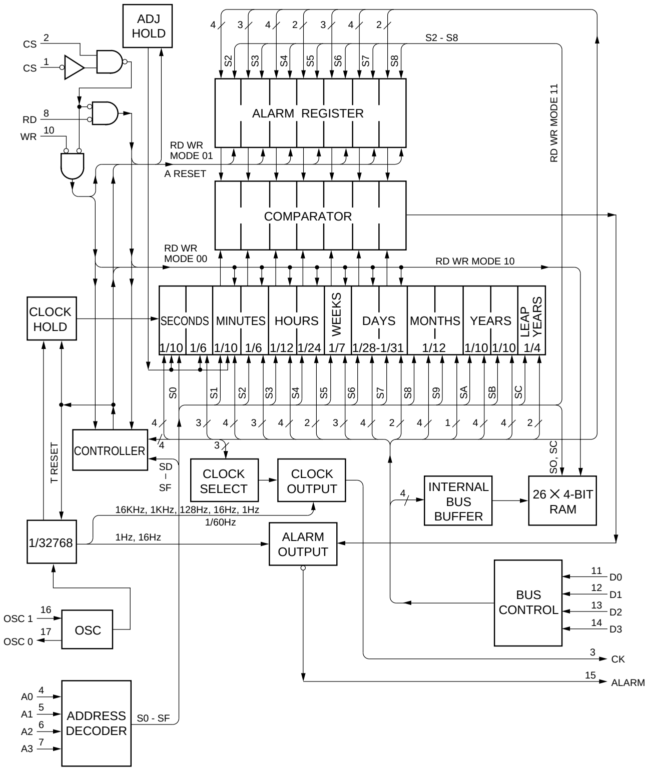
C-MOS REAL TIME CLOCK

—TOP VIEW—


CS 1
CS 2
CK 3
A0 4
A1 5
A2 6
A3 7
RD 8
9 GND
VDD (+5V) 18
17 OSCO
16 OSCI
15 ALARM
14 D3
13 D2
12 D1
11 D0
10 WR


4 A0
5 A1
6 A2
7 A3
11 D0
12 D1
13 D2
8 RD
10 WR
1 CS
2 CS
ALARM 15
CK 3
OSCI OSCI
16 17

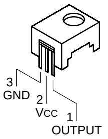
A0 - A3	;	ADDRESS BUS IN
ALARM	;	ALARM OUT
CK	;	CLOCK OUT
CS	;	CHIP SELECT IN
D0 - D3	;	DATA BUS IN/OUT
OSCI	;	CRYSTAL/CLOCK IN
OSCO	;	CRYSTAL/CLOCK OUT
RD	;	READ STROBE IN
WR	;	WRITE STROBE IN

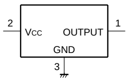

CS 2
CS 1
RD 8
WR 10
ADJ HOLD
S2 S3 S4 S5 S6 S7 S8
S2 - S8
ALARM REGISTER
RD WR MODE 01
A RESET
COMPARATOR
RD WR MODE 00
RD WR MODE 10
RD WR MODE 11
CLOCK HOLD
SECONDS 1/10 1/6
MINUTES 1/10 1/6
HOURS 1/12 1/24
WEEKS 1/7
DAYS 1/28-1/31
MONTHS 1/12
YEARS 1/10 1/10
LEAP YEARS 1/4
S0 S1 S2 S3 S4 S5 S6 S7 S8 S9 SA SB SC
CONTROLLER
SD - SF
T RESET
CLOCK SELECT
CLOCK OUTPUT
INTERNAL BUS BUFFER
26 × 4-BIT RAM
S0, SC
16KHz, 1KHz, 128Hz, 16Hz, 1Hz
1/60Hz
1/32768
1Hz, 16Hz
ALARM OUTPUT
BUS CONTROL
11 D0
12 D1
13 D2
14 D3
3 CK
15 ALARM
OSC 1 16
OSC 0 17
OSC
A0 4
A1 5
A2 6
A3 7
ADDRESS DECODER
S0 - SF

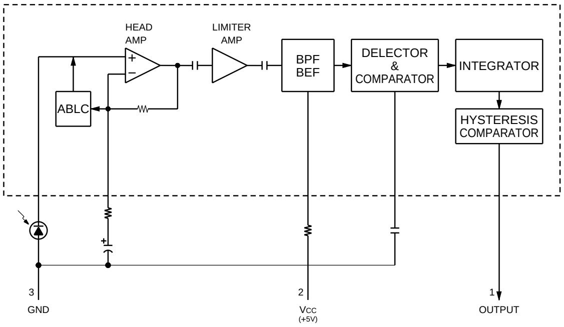
http://getMANUAL.com

SBX1780-51 (SONY)

INFRARED REMOTE CONTROL RECEIVER


3
GND
2
Vcc
1
OUTPUT

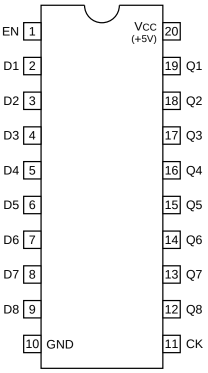

2
Vcc
OUTPUT
1
GND
3

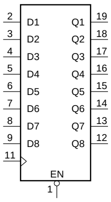

HEAD AMP
LIMITER AMP
BPF BEF
DELECTOR & COMPARATOR
INTEGRATOR
HYSTERESIS COMPARATOR
ABLC
3
GND
2
Vcc (+5V)
1
OUTPUT

SN74ALS574BNS (TI)FLAT PACKAGE
SN74ALS574BNS-E05

TTL 3-STATE D-TYPE EDGE-TRIGGERED FLIP-FLOP

—TOP VIEW—

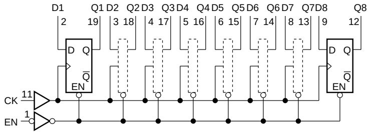

EN 1
D1 2
D2 3
D3 4
D4 5
D5 6
D6 7
D7 8
D8 9
10 GND
Vcc (+5V) 20
19 Q1
18 Q2
17 Q3
16 Q4
15 Q5
14 Q6
13 Q7
12 Q8
11 CK


2 D1 Q1 19
3 D2 Q2 18
4 D3 Q3 17
5 D4 Q4 16
6 D5 Q5 15
7 D6 Q6 14
8 D7 Q7 13
9 D8 Q8 12
11
EN
1

EACH FLIP-FLOP

INPUTS			OUT
EN	CK	D	Q
0	↑	1	1
0	↑	0	0
0	0	×	Q_0
1	×	×	HI-Z

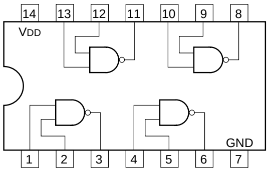
0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE
HI-Z ; HIGH IMPEDANCE
Q_0 ; NO CHANGE

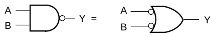

D1 2
Q1 19
D2 3
Q2 18
D3 4
Q3 17
D4 5
Q4 16
D5 6
Q5 15
D6 7
Q6 14
D7 8
Q7 13
D8 9
Q8 12
D Q
Q̄
EN
CK 11
EN 1

SN74HC00ANS (TI)FLAT PACKAGE
SN74HC00ANS-E05
SN74HCT00ANS-E05 (TI)FLAT PACKAGE
TC74VHC00F (TOSHIBA)FLAT PACKAGE
TC74VHC00F(EL)

C-MOS QUAD 2-INPUT NAND GATES

—TOP VIEW—


14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



Y = $\overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

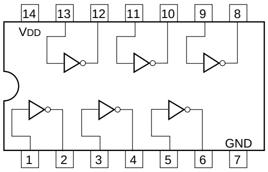
NOTE:

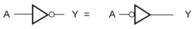
TYPE	VDD
74AC/74VHC	+2 to +5.5V
74ACT/74HCT/74VHCT	+4.5 to +5.5V
LCX	+2 to +3.6V
OTHER TYPES	+2 to +6V

SN74HC04ANS (TI)FLAT PACKAGE
SN74HC04ANS-E05
TC74HCT04AF (TOSHIBA)FLAT PACKAGE
TC74HCT04AF(EL)

C-MOS HEX INVERTERS

—TOP VIEW—


14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



Y = $\overline{A}$

A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

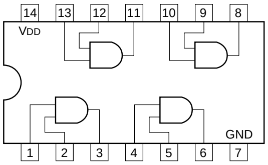
NOTE:

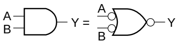
TYPE	VDD
74AC/74VHC/74VHCT	+2 to +5.5V
74ACT/74HCT	+4.5 to +5.5V
74LCX	+2 to +3.6V
OTHER TYPE	+2 to +6V

SN74HC08ANS (TI)FLAT PACKAGE
SN74HC08ANS-E05
SN74HCT08ANS-E05 (TI)

C-MOS QUAD 2-INPUT AND GATE

—TOP VIEW—


14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



Y = A • B = $\overline{\overline{A} + \overline{B}}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL

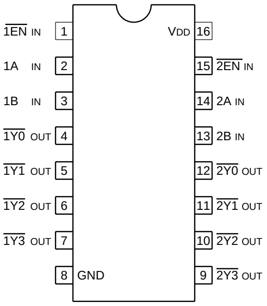
NOTE;

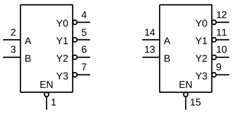
TYPE	VDD
74AC	+2 to +5.5V
40H	+2 to +8V
74ACT/74HCT/74VHCT	+4.5 to +5.5V
74LCX	+2 to +3.6V
OTHER TYPES	+2 to +6V

SN74HC139ANS (TI)FLAT PACKAGE
SN74HC139ANS-E05
TC74VHC139F(EL) (TOSHIBA)

C-MOS DUAL 2-TO-4 DECODER/DEMULTIPLEXER

—TOP VIEW—


1EN IN 1
1A IN 2
1B IN 3
1Y0 OUT 4
1Y1 OUT 5
1Y2 OUT 6
1Y3 OUT 7
8 GND
VDD 16
15 2EN IN
14 2A IN
13 2B IN
12 2Y0 OUT
11 2Y1 OUT
10 2Y2 OUT
9 2Y3 OUT


2 A
3 B
Y0 4
Y1 5
Y2 6
Y3 7
EN
1
14 A
13 B
Y0 12
Y1 11
Y2 10
Y3 9
EN
15

INPUTS			OUTPUTS			
EN	B	A	Y3	Y2	Y1	Y0
0	0	0	1	1	1	0
0	0	1	1	1	0	1
0	1	0	1	0	1	1
0	1	1	0	1	1	1
1	×	×	1	1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE

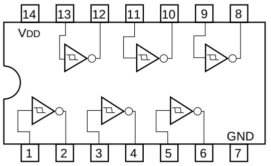
NOTE :

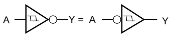
TYPE	VDD
TC74AC/TC74VHC	+2 to +5.5V
HCT/ACT	+5V
OTHER TYPES	+2 to +6V

SN74HC14ANS (TI)FLAT PACKAGE
SN74HC14ANS-E05
TC74VHC14F (TOSHIBA)FLAT PACKAGE
TC74VHC14F(EL)

C-MOS HEX SCHMITT TRIGGER INVERTERS

—TOP VIEW—

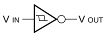

14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



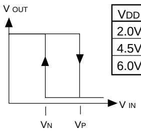
$Y = \overline{A}$

A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL



VDD	VN	VP
2.0V	0.75V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V



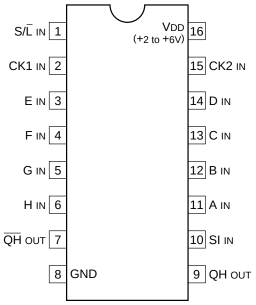
NOTE :

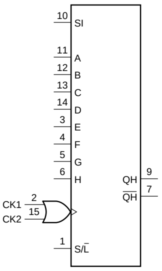
TYPE	VDD
74LCX	+2 to +3.6V
TC74AC/VHC	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC165ANS (TI)FLAT PACKAGE
SN74HC165ANS-E05
TC74VHC165F (TOSHIBA)
TC74VHC165F(EL)

C-MOS SERIAL-OR PARALLEL-INPUT SHIFT REGISTER

—TOP VIEW—

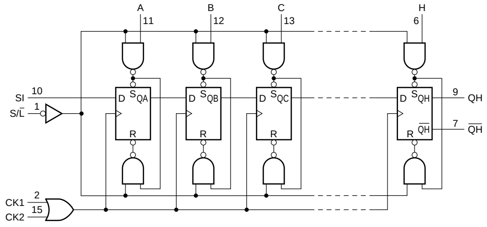

S/L̄ IN 1
CK1 IN 2
E IN 3
F IN 4
G IN 5
H IN 6
Q̄H OUT 7
8 GND
VDD (+2 to +6V) 16
15 CK2 IN
14 D IN
13 C IN
12 B IN
11 A IN
10 SI IN
9 QH OUT


10
SI
11
A
12
B
13
C
14
D
3
E
4
F
5
G
6
H
QH
9
Q̄H
7
CK1
2
15
CK2
1
S/L̄

SI	;	SERIAL DATA IN
A-H	;	PARALLEL DATA IN
CK1, CK2	;	CLOCK IN (↑)
S/L̄	;	SHIFT/LOAD IN
QH Q̄H	;	8th BIT OUT (COMPLEMENTALY)

INPUTS				CONTENTS		OUTPUT	OPERATION
S/L	CK1+CK2	SI	A----------H	QA	QB-----	QH	
0	×	×	a----------h	a	b-----	h	PARALLEL LOAD
1	↑	0	×	0	QAo---	QGo	RIGHT SHIFT
1	↑	1	×	1	QAo---	QGo	
1	↓	×	×	QAo	QBo---	QHo	NO COUNT
1	0	×	×	QAo	QBo---	QHo	
1	1	×	×	QAo	QBo---	QHo	

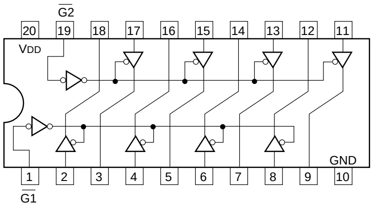
0	;	LOW LEVEL
1	;	HIGH LEVEL
×	;	DON'T CARE
a-h	;	LEVEL OF INPUTS A-H
QAo - QHo	;	LEVEL OF QA-QH BEFORE THE INDICATED INPUT CONDITIONS WERE ESTABLISHED

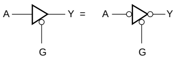

A
11
B
12
C
13
H
6
SI
10
S/L̄
1
D
S
QA
R
D
S
QB
R
D
S
QC
R
D
S
QH
R
Q̄H
9
QH
7
Q̄H
CK1
2
15
CK2

SN74HC244ANS (TI)FLAT PACKAGE
SN74HC244ANS-E05
TC74HCT244AF (TOSHIBA)FLAT PACKAGE
TC74HCT244AF(EL)
TC74VHC244F (TOSHIBA)FLAT PACKAGE
TC74VHC244F(EL)

C-MOS BUS BUFFER WITH 3-STATE OUTPUTS

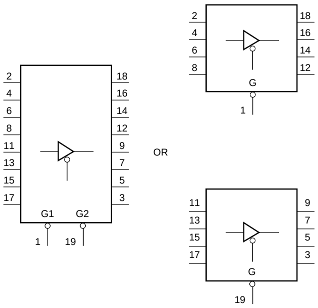
—TOP VIEW—


Ḡ2
20
19
18
17
16
15
14
13
12
11
VDD
GND
1
2
3
4
5
6
7
8
9
10
Ḡ1



G	A	Y
0	0	0
0	1	1
×	×	HI-Z

0	;	LOW LEVEL
1	;	HIGH LEVEL
×	;	DON'T CARE
HI-Z	;	HIGH IMPEDANCE


2
4
6
8
11
13
15
17
18
16
14
12
9
7
5
3
G1
G2
1
19
OR
2
4
6
8
18
16
14
12
G
1
11
13
15
17
9
7
5
3
G
19

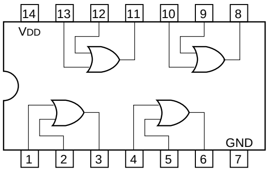
NOTE:

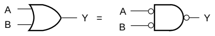
TYPE	VDD
74HC 40H	+2 to +6V
74ACT 74BCT 74FCT 74HCT	+4.5 to +5.5V
74LCX	+2 to +3.6V
74AC/74VHC	+2 to +5.5V

SN74HC32ANS (TI)FLAT PACKAGE
SN74HC32ANS-E05
SN74HCT32ANS-E05 (TI)FLAT PACKAGE
TC74VHC32F(EL) (TOSHIBA)

C-MOS QUAD 2-INPUT OR GATES

—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

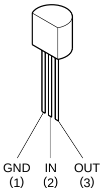
0 ; LOW LEVEL
1 ; HIGH LEVEL

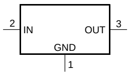
NOTE:

TYPE	VDD
74AC/74VHC	+2 to +5.5V
74HC	+2 to +6V
74HCT	+4.5 to +5.5V

NJM79L05A (JRC)−5 V(100 mA)

NEGATIVE VOLTAGE REGULATOR

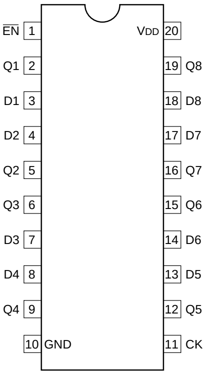

GND
(1)
IN
(2)
OUT
(3)

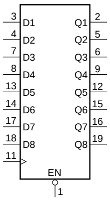

2
IN
OUT
3
GND
1

SN74HC374ANS (TI)FLAT PACKAGE
SN74HC374ANS-E05
SN74HCT374ANS-E05 (TI)FLAT PACKAGE
TC74VHC374F (TOSHIBA)FLAT PACKAGE
TC74VHC374F(EL)

C-MOS 3-STATE OCTAL D-TYPE FLIP-FLOP

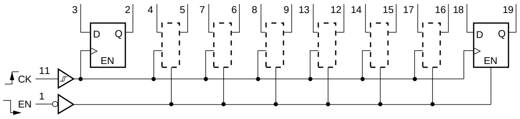
—TOP VIEW—


$\overline{EN}$ 1
Q1 2
D1 3
D2 4
Q2 5
Q3 6
D3 7
D4 8
Q4 9
10 GND
VDD 20
19 Q8
18 D8
17 D7
16 Q7
15 Q6
14 D6
13 D5
12 Q5
11 CK


3 D1
4 D2
7 D3
8 D4
13 D5
14 D6
17 D7
18 D8
11
Q1 2
Q2 5
Q3 6
Q4 9
Q5 12
Q6 15
Q7 16
Q8 19
EN
1

INPUTS			OUT
EN	D	CK	0
0	1	↑	1
0	0	↑	0
0	×	0	Q_0
1	×	×	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE
HI-Z ; HIGH IMPEDANCE


3
2
4
5
7
6
8
9
13
12
14
15
17
16
18
19
D Q
EN
CK 11
EN 1

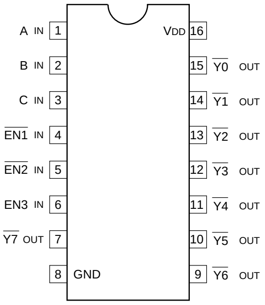
NOTE :

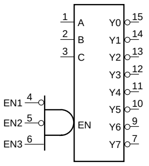
TYPE	VDD
74AC/74HC	+2 to +6V
74ACT/74BCT/74FCT /74HCT	+5V
74VHC	+2 to +5.5V

SN74HCT138ANS (TI)FLAT PACKAGE
SN74HCT138ANS-E05
TC74VHC138F(EL) (TOSHIBA)
TC74VHCT138F(EL) (TOSHIBA)FLAT PACKAGE

C-MOS 3-TO-8 LINE DECODER / DEMULTIPLEXER

—TOP VIEW—


A IN 1
B IN 2
C IN 3
$\overline{EN1}$ IN 4
$\overline{EN2}$ IN 5
EN3 IN 6
$\overline{Y7}$ OUT 7
8 GND
VDD 16
15 $\overline{Y0}$ OUT
14 $\overline{Y1}$ OUT
13 $\overline{Y2}$ OUT
12 $\overline{Y3}$ OUT
11 $\overline{Y4}$ OUT
10 $\overline{Y5}$ OUT
9 $\overline{Y6}$ OUT


1 A
2 B
3 C
EN1 4
EN2 5
EN3 6
EN
Y0 15
Y1 14
Y2 13
Y3 12
Y4 11
Y5 10
Y6 9
Y7 7

INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	×	×	×	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

$EN = \overline{EN1} \cdot \overline{EN2} \cdot EN3$

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE

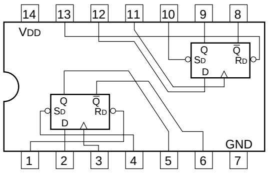
NOTE:

TYPE	VDD
74HCT138 TYPE	+5V
74ACT138 TYPE	+4.5 to+5.5V
TC74AC138 TYPE TC74VHC138	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC74ANS (TI)FLAT PACKAGE
SN74HC74ANS-E05
SN74HCT74ANS-E05 (TI)FLAT PACKAGE
TC74VHC74F(EL) (TOSHIBA)

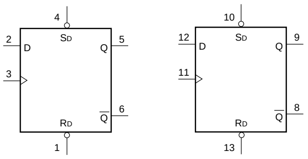
C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET

—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7
Q
$\overline{Q}$
SD
RD
D

INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	×	×	1	0
1	0	×	×	0	1
0	0	×	×	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	×	Qn	$\overline{Qn}$

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE


4
SD
2 D
Q 5
3
RD
$\overline{Q}$ 6
1
10
SD
12 D
Q 9
11
RD
$\overline{Q}$ 8
13

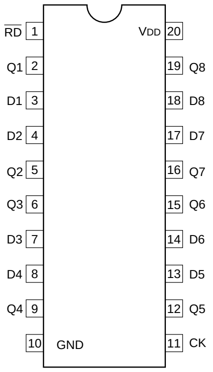
NOTE:

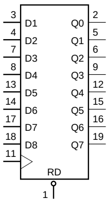
TYPE	VDD
74HCT/74ACT	+4.5 to +5.5V
74LVC	+2.7 to +3.6V
74AC/74VHC	+2 to +5.5V
OTHERS	+2 to +6V

SN74HCT273ANS-E05 (TI)FLAT PACKAGE
TC74VHC273F (TOSHIBA)FLAT PACKAGE
TC74VHC273F(EL)

C-MOS OCTAL D-TYPE FLIP-FLOPS WITH RESET

—TOP VIEW—


$\overline{RD}$ 1
Q1 2
D1 3
D2 4
Q2 5
Q3 6
D3 7
D4 8
Q4 9
10 GND
VDD 20
19 Q8
18 D8
17 D7
16 Q7
15 Q6
14 D6
13 D5
12 Q5
11 CK


3 D1
4 D2
7 D3
8 D4
13 D5
14 D6
17 D7
18 D8
11
Q0 2
Q1 5
Q2 6
Q3 9
Q4 12
Q5 15
Q6 16
Q7 19
RD
1

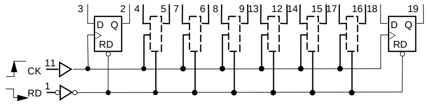
EACH FLIP-FLOP

INPUT			OUTPUT
RD	CX	D	Q
0	×	×	0
1	↑	0	0
1	↑	1	1
1	0	×	Qo

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE
Qo ; NO CHANGE

NOTE:

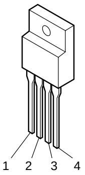
TYPE	VDD
ACT / HCT	+5V
TC74AC / TC74VHC	+2 to +5.5V
OTHER TYPES	+2 to +6V

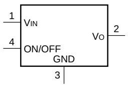

3
2
4
5
7
6
8
9
13
12
14
15
17
16
18
19
D Q
RD
CK 11
RD 1

PQ05RF11 (SHARP)+5 V

POSITIVE VOLTAGE REGULATOR (1A)

—TOP VIEW—

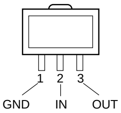


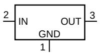

1 VIN
4 ON/OFF
VO 2
GND
3

RH5RE30AA-T1 (RICOH)+3.0 V FLAT PACKAGE

THREE TERMINAL POSITIVE VOLTAGE REGULATOR

—TOP VIEW—

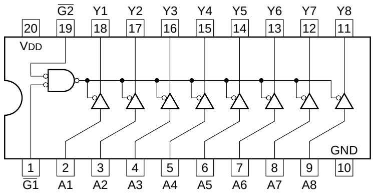

1 2 3
GND IN OUT

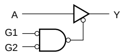

2 IN
OUT 3
GND
1

SN74HCT541ANS (TI)FLAT PACKAGE
SN74HCT541ANS-E05
TC74VHCT541F (TOSHIBA)FLAT PACKAGE
TC74VHCT541F(EL)

C-MOS BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS

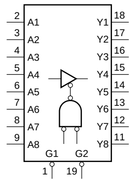
—TOP VIEW—


G2
Y1
Y2
Y3
Y4
Y5
Y6
Y7
Y8
20
19
18
17
16
15
14
13
12
11
VDD
GND
1
2
3
4
5
6
7
8
9
10
G1
A1
A2
A3
A4
A5
A6
A7
A8



G1	G2	A	Y
0	0	0	0
0	0	1	1
1	✕	✕	HI-Z
✕	1	✕	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
✕ ; DON'T CARE
HI-Z ; HIGH IMPEDANCE


2
3
4
5
6
7
8
9
A1
A2
A3
A4
A5
A6
A7
A8
Y1
Y2
Y3
Y4
Y5
Y6
Y7
Y8
18
17
16
15
14
13
12
11
G1
G2
1
19

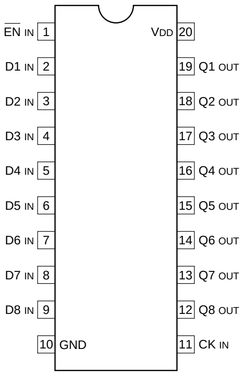
NOTE :

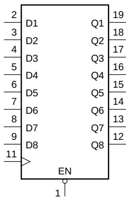
TYPE	V_{DD}
TC74AC/TC74VHC	+2 to +5.5V
ABT/ACT/BCT/HCT/VHCT	+5V
LCX	+2 to +3.6V
OTHER TYPES	+2 to +6V

SN74HCT574ANS (TI)FLAT PACKAGE
SN74HCT574ANS-E05
TC74HCT574AF (TOSHIBA)FLAT PACKAGE
TC74VHC574F (TOSHIBA)FLAT PACKAGE
TC74VHC574F(EL)

C-MOS 3-STATE D-TYPE EDGE-TRIGGERED FLIP-FLOP

—TOP VIEW—

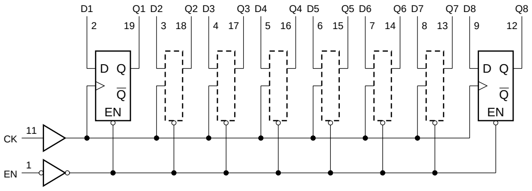

EN IN 1
D1 IN 2
D2 IN 3
D3 IN 4
D4 IN 5
D5 IN 6
D6 IN 7
D7 IN 8
D8 IN 9
10 GND
VDD 20
19 Q1 OUT
18 Q2 OUT
17 Q3 OUT
16 Q4 OUT
15 Q5 OUT
14 Q6 OUT
13 Q7 OUT
12 Q8 OUT
11 CK IN


2
3
4
5
6
7
8
9
11
D1
D2
D3
D4
D5
D6
D7
D8
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
19
18
17
16
15
14
13
12
EN
1

EACH FLIP-FLOP

INPUTS			OUT
EN	CK	D	Q
0	↑	1	1
0	↑	0	0
0	↓	✕	Q_0
1	✕	✕	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
✕ ; DON'T CARE
HI-Z ; HIGH IMPEDANCE
Q_0 ; NO CHANGE


D1
Q1
D2
Q2
D3
Q3
D4
Q4
D5
Q5
D6
Q6
D7
Q7
D8
Q8
2
19
3
18
4
17
5
16
6
15
7
14
8
13
9
12
D
Q
EN
CK
11
EN
1

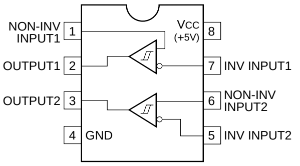
NOTE;

TYPE	V_{DD}
74HC	+2 to +6V
74AC/74VHC	+2 to +5.5V
74ACT/74FCT 74HCT/74VHCT	+4.5 to +5.5V
74LCX	+2 to +3.6V
74LVC	+2.7 to +3.6V

SN75157PS (TI)
SN75157PS-ELL2000

DUAL DIFFERENTIAL LINE RECEIVER

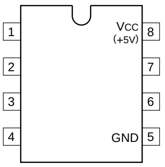
—TOP VIEW—

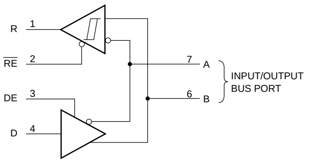

NON-INV INPUT1 1
OUTPUT1 2
OUTPUT2 3
4 GND
VCC (+5V) 8
7 INV INPUT1
6 NON-INV INPUT2
5 INV INPUT2

SN75176BP (TI)
SN75176BPS-E05

TTL-DIFFERENTIAL BUS TRANSCEIVER

—TOP VIEW—


1
2
3
4
VCC (+5V) 8
7
6
GND 5


R 1
RE 2
DE 3
D 4
7 A
6 B
INPUT/OUTPUT BUS PORT

FUNCTION TABLE

-DRIVER-

INPUT D	ENABLE DE	OUTPUTS	
		A	B
1	1	1	0
0	1	0	1
✕	0	HI-Z	HI-Z

-RECEIVER-

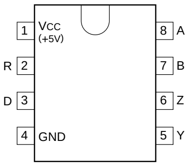
DIFFERENTIAL INPUTS A-B	ENABLE $\overline{RE}$	OUTPUTS
		R
$V_{ID} > 0.2V$	0	1
$-0.2V < V_{ID} < 0.2V$	0	?
$V_{ID} < -0.2V$	0	0
✕	1	HI-Z

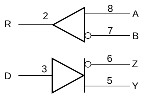
1 ; HIGH LEVEL
0 ; LOW LEVEL
✕ ; DON'T CARE
HI-Z ; HIGH IMPEDANCE
? ; INDETERMINATE

SN75179BPS (TI)FLAT PACKAGE

DIFFERENTIAL BUS DRIVER/RECEIVER

—TOP VIEW—


1
VCC (+5V)
R 2
D 3
4 GND
8 A
7 B
6 Z
5 Y


R 2
D 3
8 A
7 B
6 Z
5 Y

-DRIVER-

INPUT D	OUTPUTS	
	Y	Z
H	H	L
L	L	H

-RECEIVER-

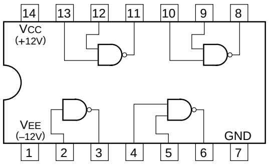
DIFFERENTIAL INPUTS A - B	OUTPUTS R
$V_{ID} \geqq 0.2V$	H
$-0.2V < V_{ID} < 0.2V$	?
$V_{ID} \leqq -0.2V$	L

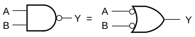
H = HIGH LEVEL   L = LOW LEVEL   ? = INDETERMINATE

SN75188NS (TI)FLAT PACKAGE
SN75188NS-E05

2-INPUT (1-INPUT) POSITIVE-NAND LINE DRIVER

—TOP VIEW—


14
13
12
11
10
9
8
VCC
(+12V)
VEE
(–12V)
GND
1
2
3
4
5
6
7



$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

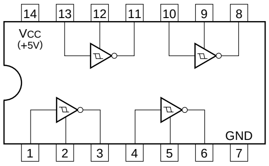
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

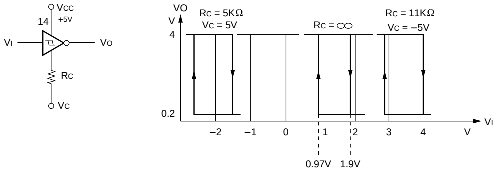
SN75189ANS (TI)FLAT PACKAGE
SN75189ANS-E05

QUADRUPLE LINE RECEIVER

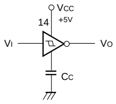
—TOP VIEW—


14
13
12
11
10
9
8
VCC
(+5V)
GND
1
2
3
4
5
6
7

INPUT THRESHOLD SHIFTING



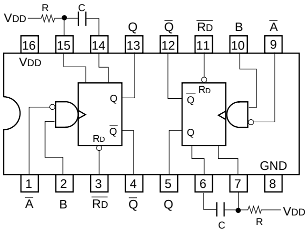
INPUT NOISE FILTERING


VCC
14
+5V
VI
VO
CC

TC74HC123AF (TOSHIBA)FLAT PACKAGE
TC74HC123AF-TP2

C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS

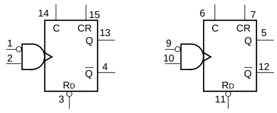
—TOP VIEW—


VDD
R
C
Q
Q̄
R̄D
B
Ā
16
15
14
13
12
11
10
9
VDD
Q
RD
Q̄
Q̄
RD
Q
GND
1
2
3
4
5
6
7
8
Ā
B
R̄D
Q̄
Q
C
R
VDD

INPUTS			OUTPUTS	
RD	A	B	Q	Q̄
0	×	×	0	1
1	1	×	0	1
1	×	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE

OUTPUT PULSE WIDTH = 0.46 CR


14
15
C
CR
13
Q
1
2
Q̄
4
RD
3
6
7
C
CR
5
Q
9
10
Q̄
12
RD
11

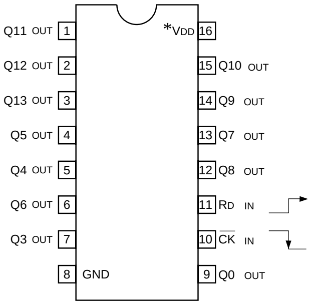
NOTE :

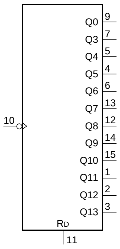
TYPE	VDD
TC74HC123AF	+5V
TC74VHC	+2V to +5.5V
OTHER TYPES	+2V to +6V

TC4020BF (TOSHIBA)FLAT PACKAGE

C-MOS 14-STAG RIPPLE-CARRY BINARY COUNTER/DRIVER

—TOP VIEW—


Q11 OUT 1
Q12 OUT 2
Q13 OUT 3
Q5 OUT 4
Q4 OUT 5
Q6 OUT 6
Q3 OUT 7
8 GND
*VDD 16
15 Q10 OUT
14 Q9 OUT
13 Q7 OUT
12 Q8 OUT
11 RD IN
10 CK IN
9 Q0 OUT


Q0 9
Q3 7
Q4 5
Q5 4
Q6 6
Q7 13
Q8 12
Q9 14
Q10 15
Q11 1
Q12 2
Q13 3
10
RD
11

*

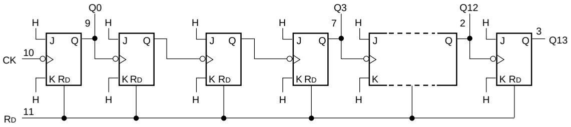
TYPE	VDD
HC4020	+2 to +6V
14020, 4020, 84020	+3 to +18V

COUNT		BINARY OUTPUTS											
		Q13	Q12	Q11	Q10	Q9	Q8	Q7	Q6	Q5	Q4	Q3	Q0
0	0000	0	0	0	0	0	0	0	0	0	0	0	0
1	0001	0	0	0	0	0	0	0	0	0	0	0	1
2	0002	0	0	0	0	0	0	0	0	0	0	0	0
3	0003	0	0	0	0	0	0	0	0	0	0	0	1
4	0004	0	0	0	0	0	0	0	0	0	0	0	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
16380	4FFC	1	1	1	1	1	1	1	1	1	1	1	0
16381	4FFD	1	1	1	1	1	1	1	1	1	1	1	1
16382	4FFE	1	1	1	1	1	1	1	1	1	1	1	0
16383	4FFF	1	1	1	1	1	1	1	1	1	1	1	1

IN HEXADECIMAL
IN DECIMAL

0 ; LOW LEVEL
1 ; HIGH LEVEL

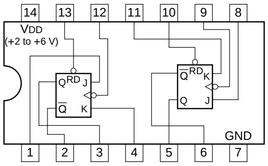
RD	Q13-Q0
1	ALL LOW
0	COUNT


Q0
9
Q3
7
Q12
2
3
Q13
H
J
Q
K RD
CK
10
RD
11
H

TC74HC107AF(TP1) (TOSHIBA)FLAT PACKAGE
TC74HC107AF(TP2)

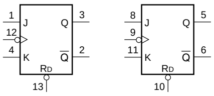
C-MOS DUAL J-K FLIP-FLOPS

—TOP VIEW—


14
13
12
11
10
9
8
VDD
(+2 to +6 V)
Q
RD
J
Q̄
K
Q̄
RD
K
Q
J
GND
1
2
3
4
5
6
7

INPUT				OUTPUT
RD	CK	J	K	Q
0	×	×	×	0
1	↓	0	0	NO CHANGE
1	↓	1	0	1
1	↓	0	1	0
1	↓	1	1	TOGGLE

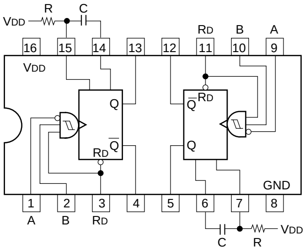
0 : LOW LEVEL
1 : HIGH LEVEL
× : DON'T CARE


1
J
Q
3
12
4
K
Q̄
2
RD
13
8
J
Q
5
9
11
K
Q̄
6
RD
10

TC74HC221AF (TOSHIBA)FLAT PACKAGE
TC74HC221AF(EL)

C-MOS MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT

—TOP VIEW—


R
C
VDD
RD
B
A
16
15
14
13
12
11
10
9
VDD
Q
Q̄
RD
Q̄
RD
Q
GND
1
2
3
4
5
6
7
8
A
B
RD
C
R
VDD

INPUTS			OUTPUTS	
RD	A	B	Q	$\overline{Q}$
0	✕	✕	0	1
✕	1	✕	0	1
✕	✕	0	0	1
1	0	↑	⎍	⊔
1	↓	1	⎍	⊔
↑	0	1	⎍	⊔

0 ; LOW LEVEL
1 ; HIGH LEVEL
✕ ; DON'T CARE

OUTPUT PULSE WIDTH = 0.7CR

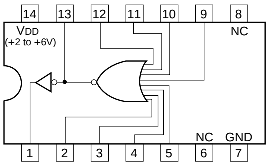
NOTE:

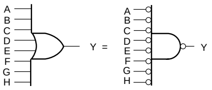
TYPE	VDD
74AC/74VHC	+2 to +5.5V
74HCT	+4.5 to +5.5V
74HC	+2 to +6V

TC74HC4078AF (TOSHIBA)FLAT PACKAGE

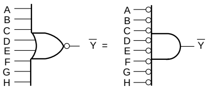
C-MOS 8-INPUT OR / NOR GATE

—TOP VIEW—


14
13
12
11
10
9
8
VDD
(+2 to +6V)
NC
NC
GND
1
2
3
4
5
6
7


A
B
C
D
E
F
G
H
Y =
A
B
C
D
E
F
G
H
Y

$$Y = A + B + C + D + E + F + G + H$$
$$= \overline{\overline{A} \bullet \overline{B} \bullet \overline{C} \bullet \overline{D} \bullet \overline{E} \bullet \overline{F} \bullet \overline{G} \bullet \overline{H}}$$


A
B
C
D
E
F
G
H
Ȳ =
A
B
C
D
E
F
G
H
Ȳ

$$\overline{Y} = \overline{A + B + C + D + E + F + G + H}$$
$$= \overline{A} \bullet \overline{B} \bullet \overline{C} \bullet \overline{D} \bullet \overline{E} \bullet \overline{F} \bullet \overline{G} \bullet \overline{H}$$

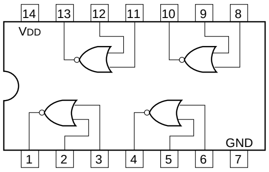
A	B	C	D	E	F	G	H	Y	$\overline{Y}$
0	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	1	0	1	0
0	0	0	0	0	0	1	1	1	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	1	0
1	1	1	1	1	1	1	0	1	0
1	1	1	1	1	1	1	1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC74VHC02F (TOSHIBA)FLAT PACKAGE
TC74VHC02F(EL)

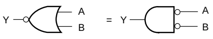
C-MOS QUAD 2-INPUT NOR GATES

—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

NOTE:

TYPE	VDD
74HC	+2 to +6V
74AC/74VHC	+2 to +5.5V
74HCT/74ACT	+4.5 to +5.5V
74LCX	+2 to +3.6V



$$Y = \overline{A + B} = \overline{A} \bullet \overline{B}$$

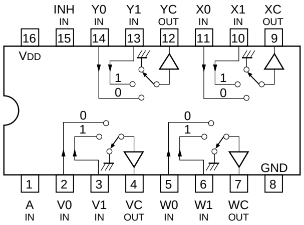
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

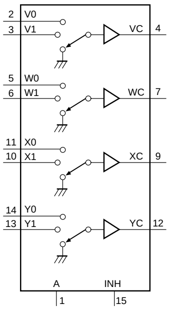
0 ; LOW LEVEL
1 ; HIGH LEVEL

TC74VHC157F (TOSHIBA)FLAT PACKAGE
TC74VHC157F(EL)

C-MOS QUAD 2-LINE-TO-1-LINE DATA SELECTOR/ DEMULTIPLEXER

—TOP VIEW—


INH IN
Y0 IN
Y1 IN
YC OUT
X0 IN
X1 IN
XC OUT
16
15
14
13
12
11
10
9
VDD
1
0
1
0
0
1
0
1
GND
1
2
3
4
5
6
7
8
A IN
V0 IN
V1 IN
VC OUT
W0 IN
W1 IN
WC OUT


2 V0
3 V1
VC 4
5 W0
6 W1
WC 7
11 X0
10 X1
XC 9
14 Y0
13 Y1
YC 12
A
INH
1
15

NOTE:

TYPE	VDD
74ACT/74FCT	+5V
TC74AC157P TC74AC157	+2 to +5.5V
TC40H	+2 to +8V
OTHER TYPES	+2 to +6V

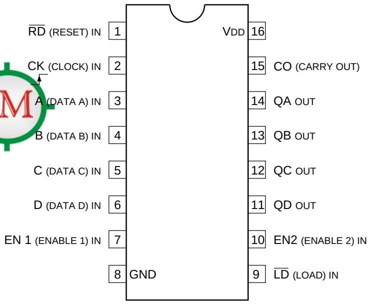
CONT.IN		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	✕	GND

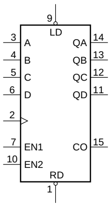
0 ; LOW LEVEL
1 ; HIGH LEVEL
✕ ; DON'T CARE

TC74VHC161F(EL) (TOSHIBA)

C-MOS SYNCHRONOUS PRESETTABLE 4-BIT BINARY COUNTER

—TOP VIEW—


R̄D̄ (RESET) IN 1
CK (CLOCK) IN 2
A (DATA A) IN 3
B (DATA B) IN 4
C (DATA C) IN 5
D (DATA D) IN 6
EN 1 (ENABLE 1) IN 7
8 GND
VDD 16
15 CO (CARRY OUT)
14 QA OUT
13 QB OUT
12 QC OUT
11 QD OUT
10 EN2 (ENABLE 2) IN
9 L̄D̄ (LOAD) IN

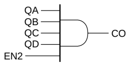

9
LD
3 A
4 B
5 C
6 D
2
7 EN1
10 EN2
QA 14
QB 13
QC 12
QD 11
CO 15
RD
1

MODE SELECTION

CONTROL INPUTS				MODE
RD	LD	EN1	EN2	
0	✕	✕	✕	RESET (ASYNCHRONOUS)
1	0	✕	✕	PRESET (SYNCHRONOUS)
1	1	0	✕	NO COUNT
1	1	✕	0	NO COUNT
1	1	1	1	COUNT

0 ; LOW LEVEL
1 ; HIGH LEVEL
✕ ; DON'T CARE

CARRY OUTPUT "CO"


QA
QB
QC
QD
EN2
CO

CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

NOTE :

TYPE	VDD
74ACT	+5 V
TC40H	+2 to +8 V
OTHERS	+2 to +6 V

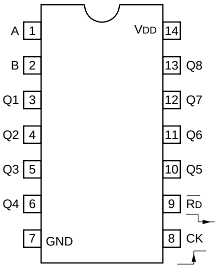
COUNT SEQUENCE

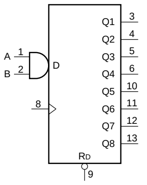
COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

TC74VHC164F (TOSHIBA)FLAT PACKAGE
TC74VHC164F(EL)

C-MOS 8-BIT SERIAL-IN/PARALLEL-OUT SHIFT REGISTER

—TOP VIEW—


A 1
B 2
Q1 3
Q2 4
Q3 5
Q4 6
7 GND
VDD 14
13 Q8
12 Q7
11 Q6
10 Q5
9 RD
8 CK

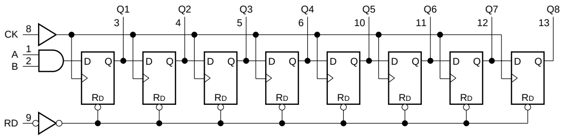

A 1
B 2
D
8
RD
9
Q1 3
Q2 4
Q3 5
Q4 6
Q5 10
Q6 11
Q7 12
Q8 13

INPUTS				OUTPUTS			
RD	CK	A	B	Q1	Q2	---	Q8
0	×	×	×	0	0	0	0
1	0	×	×	Q1o	Q2o	---	Q8o
1	↑	1	1	1	Q1n	---	Q7n
1	↑	0	×	0	Q1n	---	Q7n
1	↑	×	0	0	Q1n	---	Q7n

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE

NOTE:

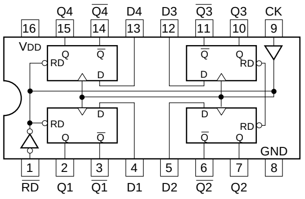
TYPE	VDD
AC/VHC	+2 to +5.5 V
HC	+2 to +6 V
HCT	+5 V

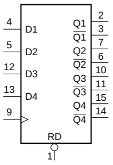

Q1 3
Q2 4
Q3 5
Q4 6
Q5 10
Q6 11
Q7 12
Q8 13
CK 8
A 1
B 2
RD 9
D Q
RD

TC74VHC175F (TOSHIBA)FLAT PACKAGE
TC74VHC175F(EL)

C-MOS QUAD D-TYPE FLIP-FLOPS WITH RESET

—TOP VIEW—


Q4 $\overline{Q4}$ D4 D3 $\overline{Q3}$ Q3 CK
16 15 14 13 12 11 10 9
VDD
GND
1 2 3 4 5 6 7 8
$\overline{RD}$ Q1 $\overline{Q1}$ D1 D2 $\overline{Q2}$ Q2


4 D1
5 D2
12 D3
13 D4
9
RD
1
Q1 2
$\overline{Q1}$ 3
Q2 7
$\overline{Q2}$ 6
Q3 10
$\overline{Q3}$ 11
Q4 15
$\overline{Q4}$ 14

RD	CK	D	Q	$\overline{Q}$
0	×	×	0	1
1	↑	1	1	0
1	↑	0	0	1
1	0	×	Q_0	$\overline{Q_0}$

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE
Q_0 ; NO CHANGE
$\overline{Q_0}$; NO CHANGE

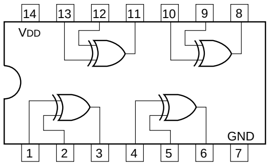
NOTE:

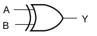
TYPE	VDD
AC TYPE	+2V to +5.5V
74ACT175 TYPE	+4.5V to +5.5V
OTHER TYPES	+2V to +6V

TC74VHC86F (TOSHIBA)FLAT PACKAGE
TC74VHC86F(EL)

C-MOS QUAD EXCLUSIVE OR GATES

—TOP VIEW—


14 13 12 11 10 9 8
VDD
GND
1 2 3 4 5 6 7



$Y = \overline{A} \cdot B + A \cdot \overline{B}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

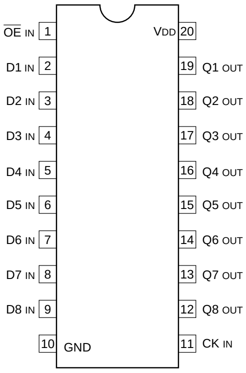
NOTE :

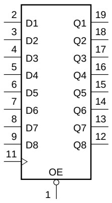
TYPE	VDD
74AC/74VHC	+2 to +5.5V
74ACT/74HCT	+4.5 to +5.5V
74LCX	+2 to +3.6V
OTHER TYPES	+2 to +6V

TC74VHC573F (TOSHIBA)FLAT PACKAGE
TC74VHC573F(EL)

C-MOS 3-STATE OUTPUTS OCTAL LATCH

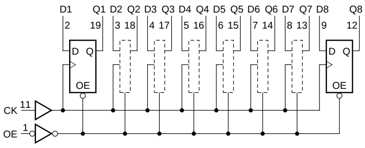
—TOP VIEW—


$\overline{OE}$ IN 1
D1 IN 2
D2 IN 3
D3 IN 4
D4 IN 5
D5 IN 6
D6 IN 7
D7 IN 8
D8 IN 9
10 GND
VDD 20
19 Q1 OUT
18 Q2 OUT
17 Q3 OUT
16 Q4 OUT
15 Q5 OUT
14 Q6 OUT
13 Q7 OUT
12 Q8 OUT
11 CK IN


2 D1
3 D2
4 D3
5 D4
6 D5
7 D6
8 D7
9 D8
11
OE
1
Q1 19
Q2 18
Q3 17
Q4 16
Q5 15
Q6 14
Q7 13
Q8 12

INPUT			OUT
OE	CK	D	Q
0	1	1	1
0	1	0	0
0	0	×	Qo
1	×	×	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE
HI-Z ; HIGH IMPEDANCE
Qo ; NO CHANGE


D1 Q1 D2 Q2 D3 Q3 D4 Q4 D5 Q5 D6 Q6 D7 Q7 D8 Q8
2 19 3 18 4 17 5 16 6 15 7 14 8 13 9 12
D Q
OE
CK 11
OE 1

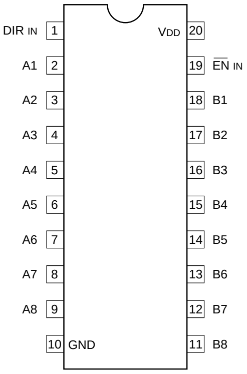
NOTE :

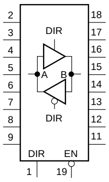
TYPE	VDD
74HC	+2 to +6V
74ABT 74ACT 74HCT/74VHCT	+5V
74AC/74VHC	+2 to +5.5V

TC74VHCT245F(EL) (TOSHIBA)FLAT PACKAGE

C-MOS BILATERAL BUS TRANSCEIVERS WITH 3-STATE OUTPUTS

—TOP VIEW—


DIR IN 1
A1 2
A2 3
A3 4
A4 5
A5 6
A6 7
A7 8
A8 9
10 GND
VDD 20
19 $\overline{EN}$ IN
18 B1
17 B2
16 B3
15 B4
14 B5
13 B6
12 B7
11 B8

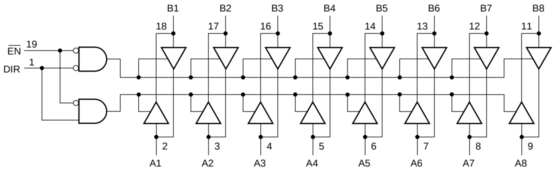

2 3 4 5 6 7 8 9
DIR
A B
DIR
DIR EN
1 19
18 17 16 15 14 13 12 11

$\overline{EN}$	DIR	OPERATION
0	0	B to A
0	1	A to B
1	×	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

NOTE:

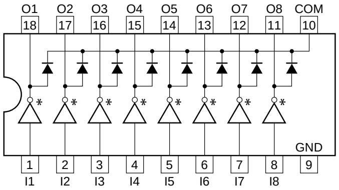
TYPE	VDD
74HC	+2 to +6V
74ABT 74ACT 74BCT 74HCT	+4.5 to +5.5V
74AC 74VHC	+2 to +5.5V
74LCX	+2 to +3.6V
74LVT	+2.7 to +3.6V

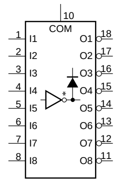

B1 B2 B3 B4 B5 B6 B7 B8
18 17 16 15 14 13 12 11
$\overline{EN}$ 19
DIR 1
2 3 4 5 6 7 8 9
A1 A2 A3 A4 A5 A6 A7 A8

TD62083F (TOSHIBA)FLAT PACKAGE

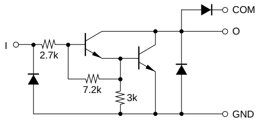
DARLINGTON DRIVER

—TOP VIEW—


O1 O2 O3 O4 O5 O6 O7 O8 COM
18 17 16 15 14 13 12 11 10
GND
1 2 3 4 5 6 7 8 9
I1 I2 I3 I4 I5 I6 I7 I8


10
COM
1 I1 O1 18
2 I2 O2 17
3 I3 O3 16
4 I4 O4 15
5 I5 O5 14
6 I6 O6 13
7 I7 O7 12
8 I8 O8 11

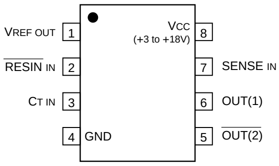
*; OPEN COLLECTOR

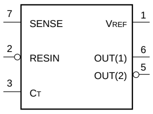

COM
I
O
2.7k
7.2k
3k
GND

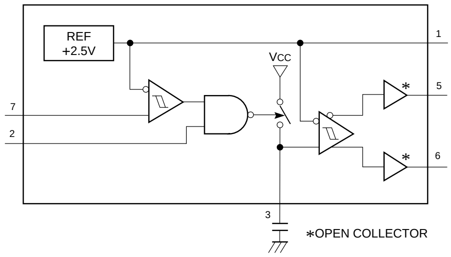
TL7705ACPS (TI)FLAT PACKAGE
TL7705ACPS-E05

POWER VOLTAGE SUPERVISOR

—TOP VIEW—


VREF OUT 1
RESIN IN 2
CT IN 3
4 GND
VCC (+3 to +18V) 8
7 SENSE IN
6 OUT(1)
5 OUT(2)

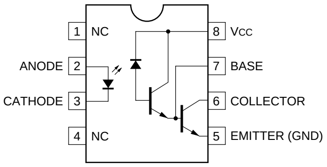

7 SENSE
2 RESIN
3 CT
VREF 1
OUT(1) 6
OUT(2) 5


REF +2.5V
VCC
1
7
2
5
6
3
*
*
*OPEN COLLECTOR

TLP553 (TOSHIBA)

PHOTO COUPLER

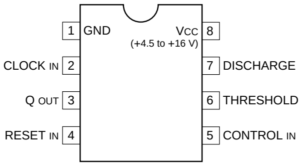
—TOP VIEW—

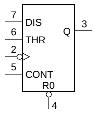

1 NC
ANODE 2
CATHODE 3
4 NC
8 VCC
7 BASE
6 COLLECTOR
5 EMITTER (GND)

UPC1555C (NEC)

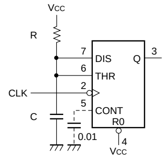
PRECISION TIMER

—TOP VIEW—


1 GND
CLOCK IN 2
Q OUT 3
RESET IN 4
VCC (+4.5 to +16 V) 8
7 DISCHARGE
6 THRESHOLD
5 CONTROL IN

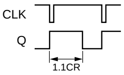

7 DIS
6 THR
2
5 CONT
R0
Q 3
4

MONOSTABLE MULTIVIBRATOR

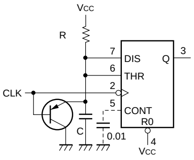

VCC
R
CLK
C
7 DIS
6 THR
2
5 CONT
R0
Q 3
0.01
4
VCC

INPUTS		OUT
RD	CLK	Q
0	×	0
1	↓	⎍

0 : LOW LEVEL
1 : HIGH LEVEL
× : DON'T CARE

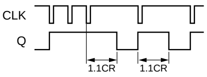


RETRIGGERABLE MONO. MULTIVIBRATOR
(MISSING PULSE DETECTOR)

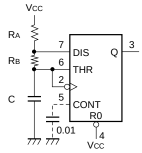

VCC
R
CLK
C
7 DIS
6 THR
2
5 CONT
R0
Q 3
0.01
4
VCC

INPUTS		OUT
RD	CLK	Q
0	×	0
1	↓	⎍

0 : LOW LEVEL
1 : HIGH LEVEL
× : DON'T CARE

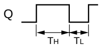

CLK
Q
1.1CR
1.1CR

ASTABLE MULTIVIBRATOR


VCC
RA
RB
C
7 DIS
6 THR
2
5 CONT
R0
Q 3
0.01
4
VCC

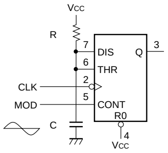
RD	Q
0	0
1	⎍⎍

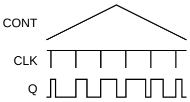
0 : LOW LEVEL
1 : HIGH LEVEL



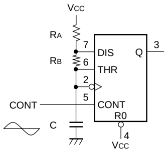
$T_H = 0.693C (R_A+R_B)$
$T_L = 0.693C R_B$

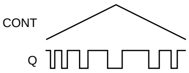
PULSE WIDTH MODULATOR


VCC
R
CLK
MOD
C
7 DIS
6 THR
2
5 CONT
R0
Q 3
4
VCC



VCO
(PULSE POSITION MODULATOR)

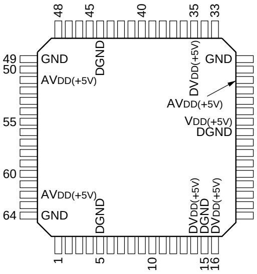

VCC
RA
RB
CONT
C
7 DIS
6 THR
2
5 CONT
R0
Q 3
4
VCC



TLC5733AIPM (TI)

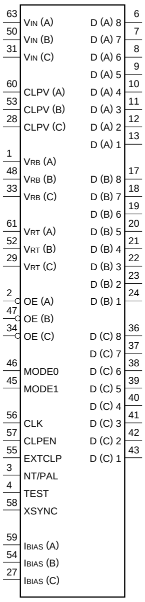
C-MOS 8-BIT 3CHANNEL SEMI-FLASH A/D CONVERTER

—TOP VIEW—


48
45
40
35
33
49
50
GND
AVDD(+5V)
DGND
DVDD(+5V)
GND
32
30
AVDD(+5V)
VDD(+5V)
DGND
25
55
60
AVDD(+5V)
64
GND
DGND
DVDD(+5V)
DGND
DVDD(+5V)
20
17
1
5
10
15
16

(DV_{DD}, AV_{DD} = +5 V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	V_{RB} (A)	14	—	DV_{DD} (QA)	27	—	I_{BIAS} (C)	40	O	D (C) 4	53	I	CLPV (B)
2	I	$\overline{OE}$ (A)	15	—	DGND (QB)	28	I	CLPV (C)	41	O	D (C) 3	54	—	I_{BIAS} (B)
3	I	NT/PAL	16	—	DV_{DD} (QB)	29	I	V_{RT} (C)	42	O	D (C) 2	55	I	EXTCLP
4	I	TEST	17	O	D (B) 8	30	—	AV_{DD} (C)	43	O	D (C) 1	56	I	CLK
5	—	DGND (QA)	18	O	D (B) 7	31	I	V_{IN} (C)	44	—	DGND (QC)	57	I	CLPEN
6	O	D (A) 8	19	O	D (B) 6	32	—	GND (C)	45	I	MODE1	58	I	XSYNC
7	O	D (A) 7	20	O	D (B) 5	33	I	V_{RB} (C)	46	I	MODE0	59	—	I_{BIAS} (A)
8	O	D (A) 6	21	O	D (B) 4	34	I	$\overline{OE}$ (C)	47	I	$\overline{OE}$ (B)	60	I	CLPV (A)
9	O	D (A) 5	22	O	D (B) 3	35	—	DV_{DD} (QC)	48	I	V_{RB} (B)	61	I	V_{RT} (A)
10	O	D (A) 4	23	O	D (B) 2	36	O	D (C) 8	49	—	GND (B)	62	—	AV_{DD} (A)
11	O	D (A) 3	24	O	D (B) 1	37	O	D (C) 7	50	I	V_{IN} (B)	63	I	V_{IN} (A)
12	O	D (A) 2	25	—	DGND	38	O	D (C) 6	51	—	AV_{DD} (B)	64	—	GND (A)
13	O	D (A) 1	26	—	DV_{DD}	39	O	D (C) 5	52	I	V_{RT} (B)			


63 VIN (A)
50 VIN (B)
31 VIN (C)
60 CLPV (A)
53 CLPV (B)
28 CLPV (C)
1 VRB (A)
48 VRB (B)
33 VRB (C)
61 VRT (A)
52 VRT (B)
29 VRT (C)
2 OE (A)
47 OE (B)
34 OE (C)
46 MODE0
45 MODE1
56 CLK
57 CLPEN
55 EXTCLP
3 NT/PAL
4 TEST
58 XSYNC
59 IBIAS (A)
54 IBIAS (B)
27 IBIAS (C)
D (A) 8 6
D (A) 7 7
D (A) 6 8
D (A) 5 9
D (A) 4 10
D (A) 3 11
D (A) 2 12
D (A) 1 13
D (B) 8 17
D (B) 7 18
D (B) 6 19
D (B) 5 20
D (B) 4 21
D (B) 3 22
D (B) 2 23
D (B) 1 24
D (C) 8 36
D (C) 7 37
D (C) 6 38
D (C) 5 39
D (C) 4 40
D (C) 3 41
D (C) 2 42
D (C) 1 43

INPUT

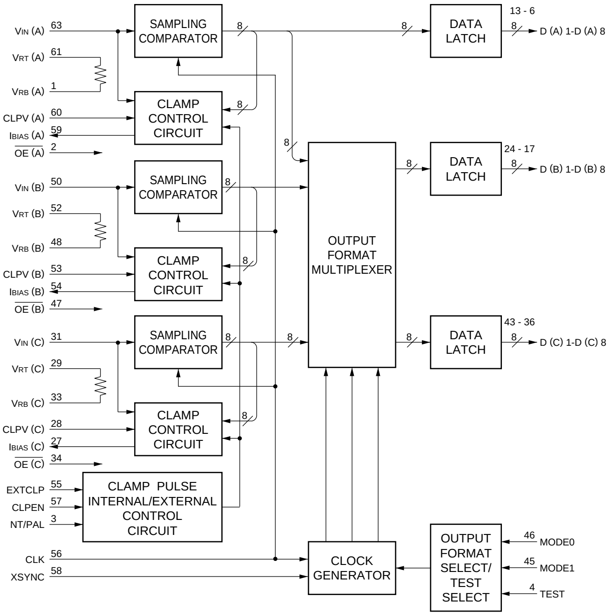
CLK ; CLOCK
CLPEN ; CLAMP ENABLE FOR INTERNAL CLAMP CIRCUIT
CLPV (A) - CLPV (C) ; CLAMPING LEVEL OF ADC
EXTCLP ; EXTERNAL CLAMP PULSE
MODE0, MODE1 ; OUTPUT FORMAT MODE SELECT
NT/PAL ; NTSC/PAL CONTROL (NTSC = 0, PAL = 1)
$\overline{OE}$ (A) - $\overline{OE}$ (C) ; OUTPUT ENABLE OF DATA
TEST ; TEST = 1, DEVICE = 0
V_{IN} (A) - V_{IN} (C) ; ANALOG INPUT OF ADC
V_{RB} (A) - V_{RB} (C) ; REFERENCE VOLTAGE BOTTOM OF ADC
V_{RT} (A) - V_{RT} (C) ; REFERENCE VOLTAGE TOP OF ADC
XSYNC ; OUTPUT SYNCHRONOUS

OUTPUT

D (A) 1 - D (A) 8 ; DATA OUTPUT OF ADC A
D (B) 1 - D (B) 8 ; DATA OUTPUT OF ADC B
D (C) 1 - D (C) 8 ; DATA OUTPUT OF ADC C

OTHER

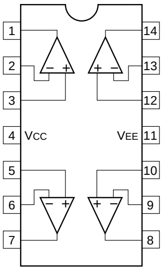
DGND ; DIGITAL GROUND
DGND (QA) - DGND (QC) ; DIGITAL GROUND FOR OUTPUT OF ADC
GND (A) - GND (C) ; GROUND OF ADC
I_{BIAS} (A) - I_{BIAS} (C) ; CLAMPING BIAS CURRENT OF ADC
AV_{DD} (A) - AV_{DD} (C) ; ANALOG V_{DD} OF ADC
DV_{DD} ; DIGITAL V_{DD}
DV_{DD} (QA) - DV_{DD} (QC) ; DIGITAL V_{DD} FOR OUTPUT OF ADC
0 ; LOW LEVEL
1 ; HIGH LEVEL


VIN (A) 63
VRT (A) 61
VRB (A) 1
CLPV (A) 60
IBIAS (A) 59
OE (A) 2
VIN (B) 50
VRT (B) 52
VRB (B) 48
CLPV (B) 53
IBIAS (B) 54
OE (B) 47
VIN (C) 31
VRT (C) 29
VRB (C) 33
CLPV (C) 28
IBIAS (C) 27
OE (C) 34
EXTCLP 55
CLPEN 57
NT/PAL 3
CLK 56
XSYNC 58
SAMPLING COMPARATOR
CLAMP CONTROL CIRCUIT
SAMPLING COMPARATOR
CLAMP CONTROL CIRCUIT
SAMPLING COMPARATOR
CLAMP CONTROL CIRCUIT
CLAMP PULSE INTERNAL/EXTERNAL CONTROL CIRCUIT
OUTPUT FORMAT MULTIPLEXER
CLOCK GENERATOR
OUTPUT FORMAT SELECT/ TEST SELECT
DATA LATCH
DATA LATCH
DATA LATCH
8
13 - 6
D (A) 1-D (A) 8
24 - 17
D (B) 1-D (B) 8
43 - 36
D (C) 1-D (C) 8
46 MODE0
45 MODE1
4 TEST

UPC4574G2 (NEC)
UPC4574G2-T2

QUAD OPERATIONAL AMPLIFIER

—TOP VIEW—

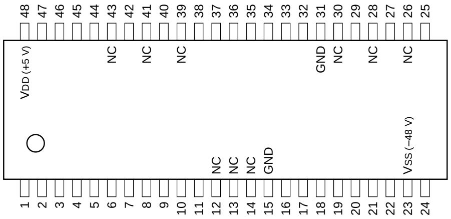

1
2
3
4 VCC
5
6
7
14
13
12
VEE 11
10
9
8
−
+

$V_{CC} - V_{EE} \leqq 36V$

UPC7073GT (NEC)

ANALOG SUBSCRIBER LINE INTERFACE CIRCUIT

—TOP VIEW—


48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25
V_{DD} (+5 V)
NC
NC
NC
GND
NC
NC
NC
NC
NC
NC
GND
V_{SS} (−48 V)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

(V_{DD} = +5 V, V_{SS} = −48 V)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	O	DC OUT3	13	—	NC	25	O	RY1	37	O	TB
2	O	DC OUT2	14	—	NC	26	—	NC	38	O	TE
3	O	DC OUT1	15	—	GND	27	O	RY2	39	—	NC
4	I	DC IN1	16	—	NC	28	—	NC	40	I/O	TS
5	I	DC IN2	17	I	$\overline{\text{PD}}$	29	O	RY3	41	—	NC
6	O	BB OUT	18	I	ALM	30	—	NC	42	I/O	RS
7	O	ASCN	19	I	BCUT	31	—	GND	43	—	NC
8	O	AGDT	20	I	RC1	32	O	REF	44	O	RE
9	I	BIAS	21	I	RC2	33	I	OP IN+	45	O	RB
10	I	RX	22	I	RC3	34	I	OP IN–	46	I	CPSR
11	I	ACOM	23	—	V_{SS}	35	O	TX	47	I	TTX IN
12	—	NC	24	O	TEF	36	—	CDC	48	—	V_{DD}

INPUT

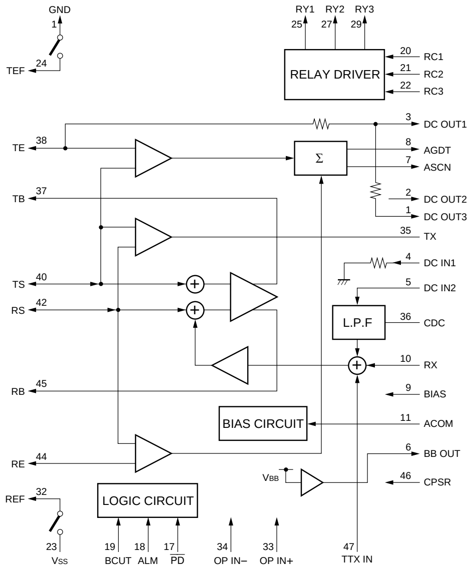
ACOM : ANALOG COMMON VOLTAGE
ALM : ALARM
BCUT : BATTERY FEEDOUT
BIAS : BIAS LEVEL
CDC : DC FEEDBACK CAPACITOR
CPSR : POWER SUPPLY REJECTION CAPACITOR
DC IN1, DC IN2 : DC FEEDBACK CONTROL
OP IN– : TELETAX SIGNAL CANCEL IN (–)
OP IN+ : TELETAX SIGNAL CANCEL IN (+)
$\overline{\text{PD}}$: POWER DOWN CONTROL
RC1 - RC3 : RELAY CONTROL
RX : SIGNAL RECEPTION
TTX IN : TELETAX SIGNAL

OUTPUT

AGDT : ANALOG GROUND DETECTION SIGNAL
ASCN : ANALOG LOOP DETECTION SIGNAL
BB OUT : V_{BB} VOLTAGE INFORMATION
DC OUT1 - DC OUT3 : DC FEEDBACK CONTROL
RB : RING BASE
RE : RING EMITTER
REF : RING EMITTER PROTECT FEED
RY1 - RY3 : RELAY DRIVER
TB : TIP BASE
TE : TIP EMITTER
TEF : TIP EMITTER PROJECT FEED
TX : TRANSMISSION

INPUT/OUTPUT

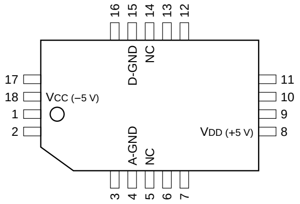
RS : RING SENSE
TS : TIP SENSE

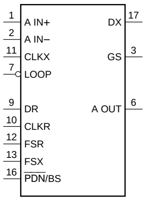

GND
1
24
TEF
RY1 RY2 RY3
25 27 29
RELAY DRIVER
20 RC1
21 RC2
22 RC3
3 DC OUT1
38 TE
Σ
8 AGDT
7 ASCN
37 TB
2 DC OUT2
1 DC OUT3
35 TX
4 DC IN1
40 TS
5 DC IN2
42 RS
L.P.F
36 CDC
10 RX
45 RB
9 BIAS
BIAS CIRCUIT
11 ACOM
44 RE
6 BB OUT
V_{BB}
46 CPSR
32 REF
LOGIC CIRCUIT
23 V_{SS}
19 BCUT
18 ALM
17 $\overline{\text{PD}}$
34 OP IN–
33 OP IN+
47 TTX IN

UPD9622L (NEC)

C-MOS PCM CODEC

—TOP VIEW—


16 15 14 13 12
D-GND
NC
17
18
1
2
V_{CC} (−5 V)
11
10
9
8
V_{DD} (+5 V)
A-GND
NC
3 4 5 6 7


1 A IN+
2 A IN–
11 CLKX
7 LOOP
9 DR
10 CLKR
12 FSR
13 FSX
16 $\overline{\text{PDN}}$/BS
DX 17
GS 3
A OUT 6

(V_{DD} = +5 V, V_{SS} = −5 V)

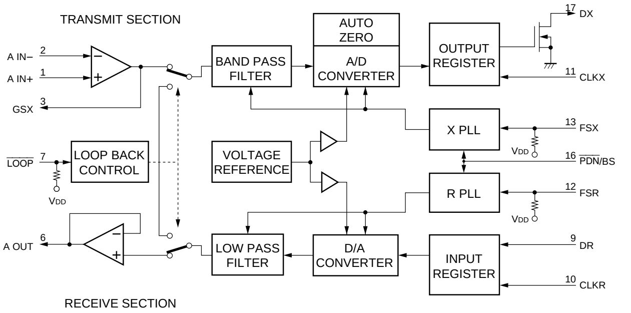
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I	A IN+	10	I	CLKR
2	I	A IN–	11	I	CLKX
3	O	GSX	12	I	FSR
4	—	A-GND	13	I	FSX
5	—	NC	14	—	NC
6	O	A OUT	15	—	D-GND
7	I	$\overline{\text{LOOP}}$	16	I	$\overline{\text{PDN}}$/BS
8	—	V_{DD}	17	O	DX
9	I	DR	18	—	V_{SS}

INPUT

A IN+ : NON-INVERTING INPUT OF OPERATIONAL AMPLIFIER
A IN– : INVERTING INPUT OF OPERATIONAL AMPLIFIER
CLKR : RECEIVE CHANNEL DATA CLOCK
CLKX : TRANSMIT CHANNEL DATA CLOCK
DR : PCM RECEIVE DATA
FSR : RECEIVE CHANNEL FRAME SYNC CLOCK
FSX : TRANSMIT CHANNEL FRAME SYNC CLOCK
$\overline{\text{LOOP}}$: ANALOG LOOP-BACK TEST CONTROL
$\overline{\text{PDN}}$/BS : POWER DOWN/BIT STILL CONTROL

OUTPUT

A OUT : RECEIVE AMPLIFIER
DX : PCM TRANSMIT DATA
GSX : OUTPUT OF OPERATIONAL AMPLIFIER

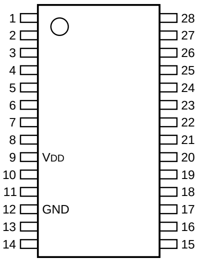

TRANSMIT SECTION
A IN– 2
A IN+ 1
GSX 3
BAND PASS FILTER
AUTO ZERO
A/D CONVERTER
OUTPUT REGISTER
17 DX
11 CLKX
X PLL
13 FSX
V_{DD}
16 $\overline{\text{PDN}}$/BS
$\overline{\text{LOOP}}$ 7
V_{DD}
LOOP BACK CONTROL
VOLTAGE REFERENCE
R PLL
12 FSR
V_{DD}
A OUT 6
LOW PASS FILTER
D/A CONVERTER
INPUT REGISTER
9 DR
10 CLKR
RECEIVE SECTION

http://getMANUAL.com

UPD17216GT-560 (NEC)FLAT PACKAGE

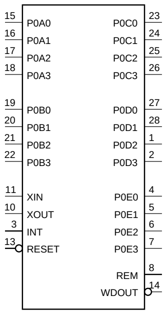
C-MOS 4 BIT SINGLE CHIP MICRO CONTROLLER

—TOP VIEW—

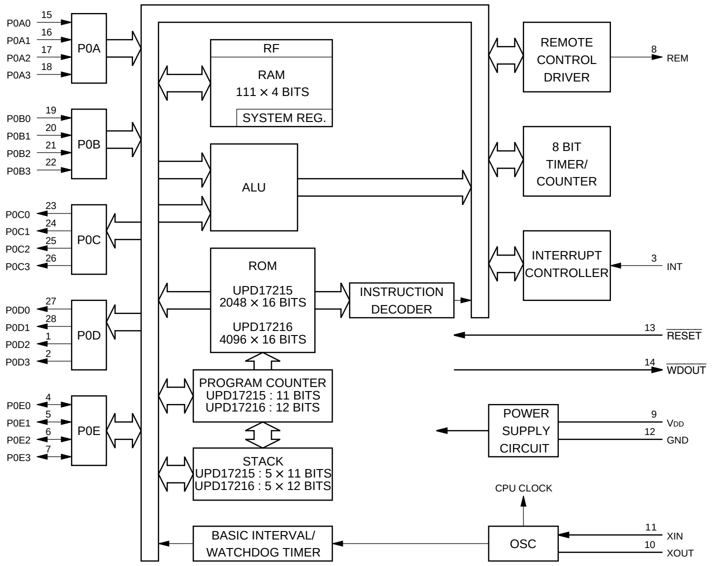

1
2
3
4
5
6
7
8
9
10
11
12
13
14
VDD
GND
28
27
26
25
24
23
22
21
20
19
18
17
16
15

VDD : +2.2 to 5.5V (HIGH SPEED MODE)
+2.0 to 5.5V (NORMAL MODE)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	O	P0D2	15	I	P0A0
2	O	P0D3	16	I	P0A1
3	I	INT	17	I	P0A2
4	I/O	P0E0	18	I	P0A3
5	I/O	P0E1	19	I	P0B0
6	I/O	P0E2	20	I	P0B1
7	I/O	P0E3	21	I	P0B2
8	O	REM	22	I	P0B3
9	—	VDD	23	O	P0C0
10	O	XOUT	24	O	P0C1
11	I	XIN	25	O	P0C2
12	—	GND	26	O	P0C3
13	I	$\overline{\text{RESET}}$	27	O	P0D0
14	O	$\overline{\text{WDOUT}}$	28	O	P0D1


15 P0A0
16 P0A1
17 P0A2
18 P0A3
19 P0B0
20 P0B1
21 P0B2
22 P0B3
11 XIN
10 XOUT
3 INT
13 RESET
P0C0 23
P0C1 24
P0C2 25
P0C3 26
P0D0 27
P0D1 28
P0D2 1
P0D3 2
P0E0 4
P0E1 5
P0E2 6
P0E3 7
REM 8
WDOUT 14

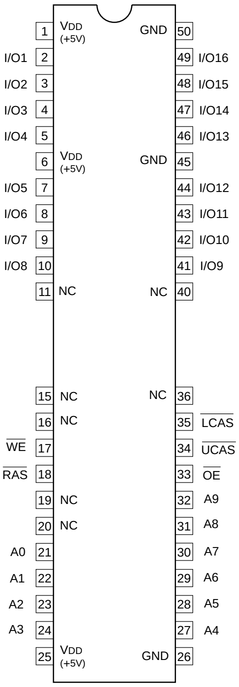
INT ; EXTERNAL INTERRUPT INPUT
P0A0 - P0A3 ; INPUT PORTS
P0B0 - P0B3
P0C0 - P0C3 ; OUTPUT PORTS
P0D0 - P0D3
P0E0 - P0E3 ; INPUT/OUTPUT PORTS
REM ; REMOTE CONTROLLER
; DRIVE OUTPUT
RESET ; SYSTEM RESET INPUT
WDOUT ; HAZARD/LOW VDD
XIN, XOUT ; OSC

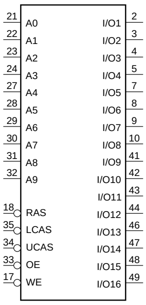

P0A0 15
P0A1 16
P0A2 17
P0A3 18
P0A
P0B0 19
P0B1 20
P0B2 21
P0B3 22
P0B
P0C0 23
P0C1 24
P0C2 25
P0C3 26
P0C
P0D0 27
P0D1 28
P0D2 1
P0D3 2
P0D
P0E0 4
P0E1 5
P0E2 6
P0E3 7
P0E
RF
RAM
111 × 4 BITS
SYSTEM REG.
ALU
ROM
UPD17215
2048 × 16 BITS
UPD17216
4096 × 16 BITS
INSTRUCTION DECODER
PROGRAM COUNTER
UPD17215 : 11 BITS
UPD17216 : 12 BITS
STACK
UPD17215 : 5 × 11 BITS
UPD17216 : 5 × 12 BITS
BASIC INTERVAL/ WATCHDOG TIMER
REMOTE CONTROL DRIVER
8 REM
8 BIT TIMER/ COUNTER
INTERRUPT CONTROLLER
3 INT
13 RESET
14 WDOUT
POWER SUPPLY CIRCUIT
9 VDD
12 GND
CPU CLOCK
OSC
11 XIN
10 XOUT

UPD4218160G5-60-7JF (NEC)FLAT PACKAGE

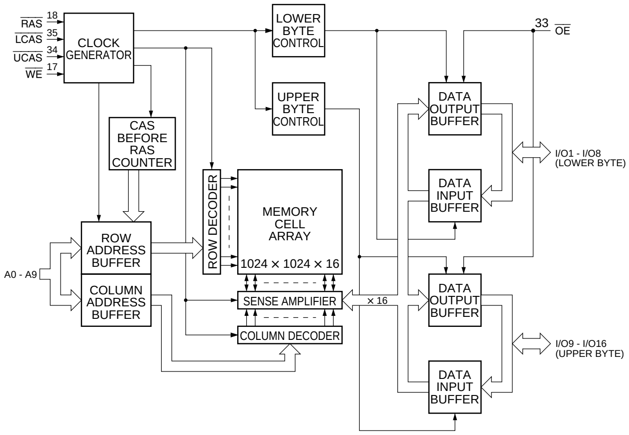
C-MOS 16M (1,048,576 × 16) BIT DYNAMIC RAM

—TOP VIEW—


1 VDD (+5V)
I/O1 2
I/O2 3
I/O3 4
I/O4 5
6 VDD (+5V)
I/O5 7
I/O6 8
I/O7 9
I/O8 10
11 NC
15 NC
16 NC
WE 17
RAS 18
19 NC
20 NC
A0 21
A1 22
A2 23
A3 24
25 VDD (+5V)
GND 50
49 I/O16
48 I/O15
47 I/O14
46 I/O13
GND 45
44 I/O12
43 I/O11
42 I/O10
41 I/O9
NC 40
NC 36
35 LCAS
34 UCAS
33 OE
32 A9
31 A8
30 A7
29 A6
28 A5
27 A4
GND 26


21 A0
22 A1
23 A2
24 A3
27 A4
28 A5
29 A6
30 A7
31 A8
32 A9
18 RAS
35 LCAS
34 UCAS
33 OE
17 WE
I/O1 2
I/O2 3
I/O3 4
I/O4 5
I/O5 7
I/O6 8
I/O7 9
I/O8 10
I/O9 41
I/O10 42
I/O11 43
I/O12 44
I/O13 46
I/O14 47
I/O15 48
I/O16 49

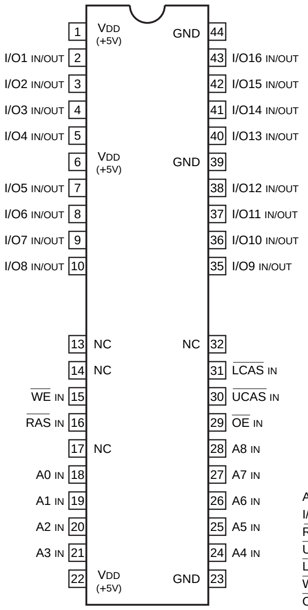
A0 - 9 ; ADDRESS INPUTS
I/O1 - 16 ; DATA INPUTS/OUTPUTS
$\overline{\text{RAS}}$; ROW ADDRESS STROBE INPUT
$\overline{\text{UCAS}}$; COLUMN ADDRESS STROBE (UPPER) INPUT
$\overline{\text{LCAS}}$; COLUMN ADDRESS STROBE (LOWER) INPUT
$\overline{\text{WE}}$; WRITE ENABLE INPUT
$\overline{\text{OE}}$; OUTPUT ENABLE INPUT

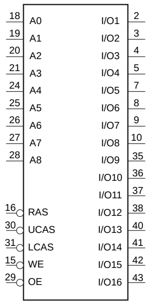

RAS 18
LCAS 35
UCAS 34
WE 17
CLOCK GENERATOR
LOWER BYTE CONTROL
UPPER BYTE CONTROL
33 OE
CAS BEFORE RAS COUNTER
DATA OUTPUT BUFFER
DATA INPUT BUFFER
I/O1 - I/O8 (LOWER BYTE)
ROW DECODER
MEMORY CELL ARRAY
1024 × 1024 × 16
ROW ADDRESS BUFFER
COLUMN ADDRESS BUFFER
A0 - A9
SENSE AMPLIFIER
× 16
COLUMN DECODER
DATA OUTPUT BUFFER
DATA INPUT BUFFER
I/O9 - I/O16 (UPPER BYTE)

UPD424260G5-70-7JF (NEC)FLAT PACKAGE

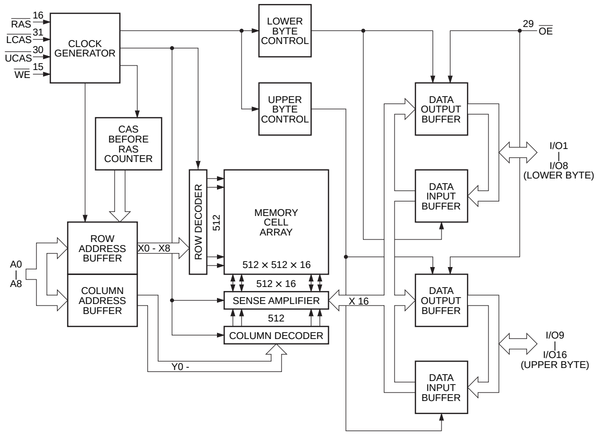
C-MOS 4M (262,144 × 16) BIT DYNAMIC RAM

—TOP VIEW—


1 VDD (+5V)
2 I/O1 IN/OUT
3 I/O2 IN/OUT
4 I/O3 IN/OUT
5 I/O4 IN/OUT
6 VDD (+5V)
7 I/O5 IN/OUT
8 I/O6 IN/OUT
9 I/O7 IN/OUT
10 I/O8 IN/OUT
13 NC
14 NC
15 WE IN
16 RAS IN
17 NC
18 A0 IN
19 A1 IN
20 A2 IN
21 A3 IN
22 VDD (+5V)
23 GND
24 A4 IN
25 A5 IN
26 A6 IN
27 A7 IN
28 A8 IN
29 OE IN
30 UCAS IN
31 LCAS IN
32 NC
35 I/O9 IN/OUT
36 I/O10 IN/OUT
37 I/O11 IN/OUT
38 I/O12 IN/OUT
39 GND
40 I/O13 IN/OUT
41 I/O14 IN/OUT
42 I/O15 IN/OUT
43 I/O16 IN/OUT
44 GND


18 A0
19 A1
20 A2
21 A3
24 A4
25 A5
26 A6
27 A7
28 A8
16 RAS
30 UCAS
31 LCAS
15 WE
29 OE
I/O1 2
I/O2 3
I/O3 4
I/O4 5
I/O5 7
I/O6 8
I/O7 9
I/O8 10
I/O9 35
I/O10 36
I/O11 37
I/O12 38
I/O13 40
I/O14 41
I/O15 42
I/O16 43

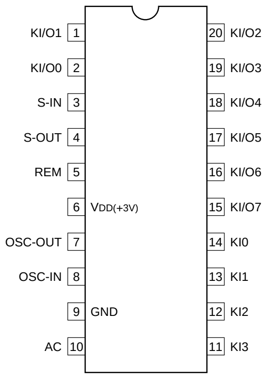
A0 - 8 ; ADDRESS INPUTS
I/O1 - 16 ; DATA INPUTS/OUTPUTS
$\overline{RAS}$; ROW ADDRESS STROBE INPUT
$\overline{UCAS}$; COLUMN ADDRESS STROBE (UPPER) INPUT
$\overline{LCAS}$; COLUMN ADDRESS STROBE (LOWER) INPUT
$\overline{WE}$; WRITE ENABLE INPUT
$\overline{OE}$; OUTPUT ENABLE INPUT


RAS 16
LCAS 31
UCAS 30
WE 15
CLOCK GENERATOR
LOWER BYTE CONTROL
UPPER BYTE CONTROL
29 OE
CAS BEFORE RAS COUNTER
ROW ADDRESS BUFFER
COLUMN ADDRESS BUFFER
A0 | A8
X0 - X8
ROW DECODER
512
MEMORY CELL ARRAY
512 × 512 × 16
512 × 16
SENSE AMPLIFIER
512
COLUMN DECODER
Y0 -
X 16
DATA OUTPUT BUFFER
DATA INPUT BUFFER
DATA OUTPUT BUFFER
DATA INPUT BUFFER
I/O1 | I/O8 (LOWER BYTE)
I/O9 | I/O16 (UPPER BYTE)

UPD6124AGS-F46 (NEC)

C-MOS 4-BIT 1-CHIP MICROCONTROLLER

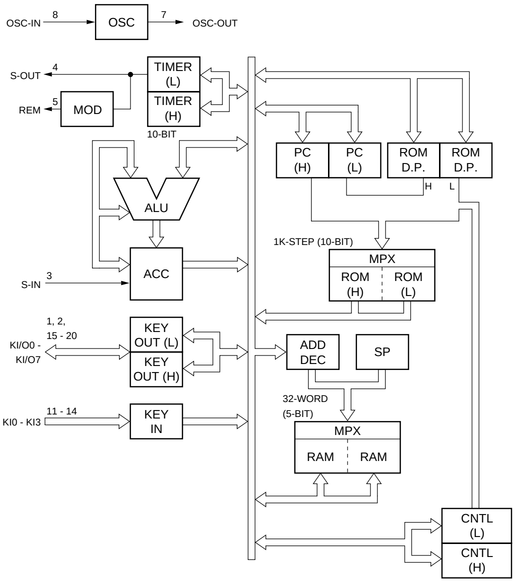
—TOP VIEW—


KI/O1 1
KI/O0 2
S-IN 3
S-OUT 4
REM 5
6 VDD(+3V)
OSC-OUT 7
OSC-IN 8
9 GND
AC 10
11 KI3
12 KI2
13 KI1
14 KI0
15 KI/O7
16 KI/O6
17 KI/O5
18 KI/O4
19 KI/O3
20 KI/O2

INPUT
AC ; ALL CLEAR (LOW VOLTAGE DETECTOR)
KI0 - KI3 ; INPUT PORT
OSC-IN ; OSCILLATOR CONNECTED
S-IN ; SERIAL

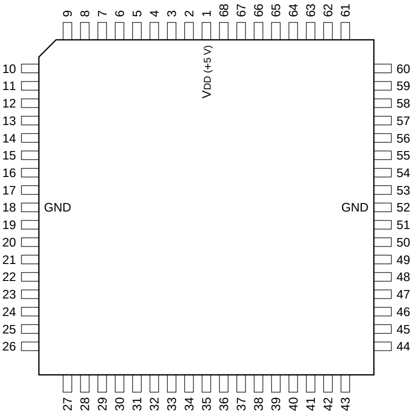
OUTPUT
OSC-OUT ; OSCILLATOR CONNECTED
REM ; REMOTE CONTROL COMMUNICATION
S-OUT ; INDICATION DURING TRANSMISSION

INPUT/OUTPUT
KI/O0 - KI/O7 ; INPUT/OUTPUT PORT

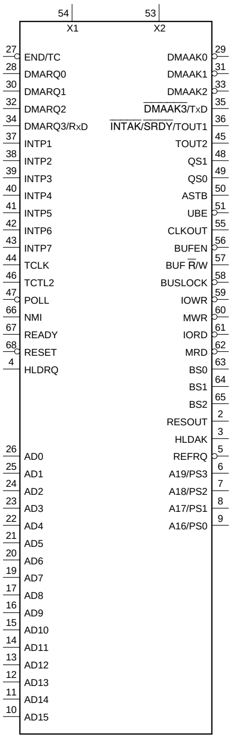

OSC-IN 8
OSC
7 OSC-OUT
S-OUT 4
REM 5
MOD
TIMER (L)
TIMER (H)
10-BIT
PC (H)
PC (L)
ROM D.P.
ROM D.P.
H
L
ALU
ACC
S-IN 3
1K-STEP (10-BIT)
MPX
ROM (H)
ROM (L)
1, 2, 15 - 20
KI/O0 - KI/O7
KEY OUT (L)
KEY OUT (H)
ADD DEC
SP
32-WORD (5-BIT)
MPX
RAM
RAM
11 - 14
KI0 - KI3
KEY IN
CNTL (L)
CNTL (H)

UPD70216L-10 (NEC)

C-MOS 16-BIT MICROPROCESSOR
—TOP VIEW—


9 8 7 6 5 4 3 2 1 68 67 66 65 64 63 62 61
VDD (+5 V)
10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
GND
GND
60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44
27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43

PIN No.	FUNCTION	PIN No.	FUNCTION	PIN No.	FUNCTION	PIN No.	FUNCTION
1	VDD	18	GND	35	DMAAK3/TxD	52	GND
2	RESOUT	19	AD7	36	INTAK/SRDY/TOUT1	53	X2
3	HLDAK	20	AD6	37	INTP1	54	X1
4	HLDRQ	21	AD5	38	INTP2	55	CLKOUT
5	REFRQ	22	AD4	39	INTP3	56	BUFEN
6	A19/PS3	23	AD3	40	INTP4	57	BUF R/W
7	A18/PS2	24	AD2	41	INTP5	58	BUSLOCK
8	A17/PS1	25	AD1	42	INTP6	59	IOWR
9	A16/PS0	26	AD0	43	INTP7	60	MWR
10	AD15	27	END/TC	44	TCLK	61	IORD
11	AD14	28	DMARQ0	45	TOUT2	62	MRD
12	AD13	29	DMAAK0	46	TCTL2	63	BS0
13	AD12	30	DMARQ1	47	POLL	64	BS1
14	AD11	31	DMAAK1	48	QS1	65	BS2
15	AD10	32	DMARQ2	49	QS0	66	NMI
16	AD9	33	DMAAK2	50	ASTB	67	READY
17	AD8	34	DMARQ3/RxD	51	UBE	68	RESET


54 X1
53 X2
27 END/TC
28 DMARQ0
30 DMARQ1
32 DMARQ2
34 DMARQ3/RxD
37 INTP1
38 INTP2
39 INTP3
40 INTP4
41 INTP5
42 INTP6
43 INTP7
44 TCLK
46 TCTL2
47 POLL
66 NMI
67 READY
68 RESET
4 HLDRQ
26 AD0
25 AD1
24 AD2
23 AD3
22 AD4
21 AD5
20 AD6
19 AD7
17 AD8
16 AD9
15 AD10
14 AD11
13 AD12
12 AD13
11 AD14
10 AD15
DMAAK0 29
DMAAK1 31
DMAAK2 33
DMAAK3/TxD 35
INTAK/SRDY/TOUT1 36
TOUT2 45
QS1 48
QS0 49
ASTB 50
UBE 51
CLKOUT 55
BUFEN 56
BUF R/W 57
BUSLOCK 58
IOWR 59
MWR 60
IORD 61
MRD 62
BS0 63
BS1 64
BS2 65
RESOUT 2
HLDAK 3
REFRQ 5
A19/PS3 6
A18/PS2 7
A17/PS1 8
A16/PS0 9

INPUT

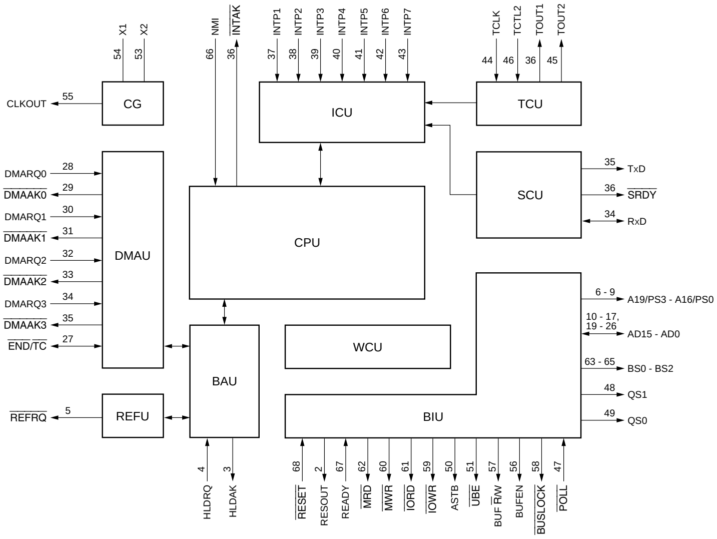
DMARQ0 - DMARQ2 : DMA REQUEST 0 - 2
DMARQ3/RxD : DMA REQUEST/RECEIVE DATA
HLDRQ : BUS HOLD REQUEST
INTP0 - INTP7 : INTERRUPT REQUEST FROM PERIPHERAL 0 - 7
NMI : NON MASKABLE INTERRUPT
POLL : POLL
READY : READY
RESET : RESET
TCLK : TIMER CLOCK
TCTL2 : TIMER CONTROL 2
X1, X2 : CRYSTAL 1, 2

OUTPUT

A16/PS0 - A19/PS3 : ADDRESS/PROCESSOR STATUS
ASTB : ADDRESS STROBE
BS0 - BS2 : BUS STATUS
BUFEN : BUFFER ENABLE
BUF R/W : BUFFER READ/WRITE
BUSLOCK : BUS LOCK
CLKOUT : CLOCK
DMAAK0 - DMAAK2 : DMA ACKNOWLEDGE 0 - 2
DMAAK3/TxD : DMA ACKNOWLEDGE 3/TRANSMIT DATA
HLDAK : BUS HOLD ACKNOWLEDGE
INTAK/SRDY/TOUT1 : INTERRUPT ACKNOWLEDGE/SERIAL READY/TIMER OUT 1
IORD : I/O READ STROBE
IOWR : I/O WRITE STROBE
MRD : MEMORY READ STROBE
MWR : MEMORY WRITE STROBE
QS0, QS1 : QUEUE STATUS
REFRQ : REFRESH REQUEST
RESOUT : SYSTEM RESET
TOUT2 : TIMER OUT 2
UBE : UPPER BYTE ENABLE

INPUT/OUTPUT

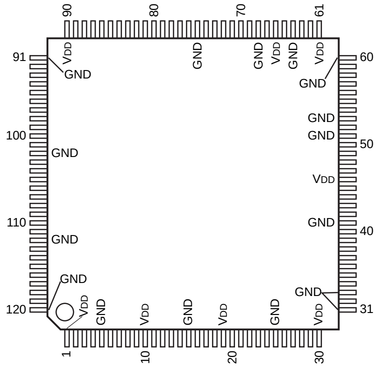
AD0 - AD15 : ADDRESS BUS/DATA BUS
END/TC : END/TERMINAL COUNT


X1 54
X2 53
NMI 66
INTAK 36
INTP1 37
INTP2 38
INTP3 39
INTP4 40
INTP5 41
INTP6 42
INTP7 43
TCLK 44
TCTL2 46
TOUT1 36
TOUT2 45
CLKOUT 55
CG
ICU
TCU
DMARQ0 28
DMAAK0 29
DMARQ1 30
DMAAK1 31
DMARQ2 32
DMAAK2 33
DMARQ3 34
DMAAK3 35
END/TC 27
DMAU
CPU
SCU
35 TxD
36 SRDY
34 RxD
BAU
WCU
REFRQ 5
REFU
BIU
6 - 9 A19/PS3 - A16/PS0
10 - 17, 19 - 26 AD15 - AD0
63 - 65 BS0 - BS2
48 QS1
49 QS0
4 HLDRQ
3 HLDAK
68 RESET
2 RESOUT
67 READY
62 MRD
60 MWR
61 IORD
59 IOWR
50 ASTB
51 UBE
57 BUF R/W
56 BUFEN
58 BUSLOCK
47 POLL

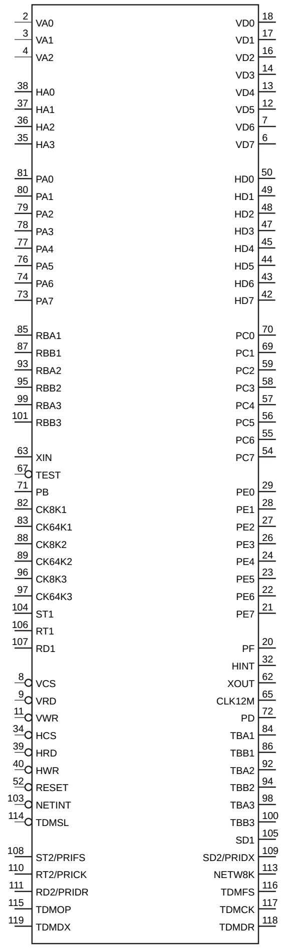
UPD65646GJ-171-3EB (NEC)FLAT PACKAGE

NETW-VCP INTERFACE

—TOP VIEW—


90
80
70
61
91
60
100
50
110
40
120
31
1
10
20
30
VDD
GND
GND
GND VDD GND VDD
GND
GND
GND
GND
VDD
GND
GND
GND
GND
VDD GND VDD GND VDD GND VDD
GND

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	—	VDD	31	—	GND	61	—	VDD	91	—	GND
2	I	VA0	32	O	HINT	62	O	XOUT	92	O	TBA2
3	I	VA1	33	—	GND	63	I	XIN	93	I	RBA2
4	I	VA2	34	I	$\overline{\text{HCS}}$	64	—	GND	94	O	TBB2
5	—	GND	35	I	HA3	65	O	CLK12M	95	I	RBB2
6	I/O	VD7	36	I	HA2	66	—	VDD	96	I	CK8K3
7	I/O	VD6	37	I	HA1	67	I	$\overline{\text{TEST}}$	97	I	CK64K3
8	I	$\overline{\text{VCS}}$	38	I	HA0	68	—	GND	98	O	TBA3
9	I	$\overline{\text{VRD}}$	39	I	$\overline{\text{HRD}}$	69	O	PC1	99	I	RBA3
10	—	VDD	40	I	$\overline{\text{HWR}}$	70	O	PC0	100	O	TBB3
11	I	$\overline{\text{VWR}}$	41	—	GND	71	I	PB	101	I	RBB3
12	I/O	VD5	42	I/O	HD7	72	O	PD	102	—	GND
13	I/O	VD4	43	I/O	HD6	73	I	PA7	103	I	$\overline{\text{NETINT}}$
14	I/O	VD3	44	I/O	HD5	74	I	PA6	104	I	ST1
15	—	GND	45	I/O	HD4	75	—	GND	105	O	SD1
16	I/O	VD2	46	—	VDD	76	I	PA5	106	I	RT1
17	I/O	VD1	47	I/O	HD3	77	I	PA4	107	I	RD1
18	I/O	VD0	48	I/O	HD2	78	I	PA3	108	I	ST2/PRIFS
19	—	VDD	49	I/O	HD1	79	I	PA2	109	O	SD2/PRIDX
20	O	PF	50	I/O	HD0	80	I	PA1	110	I	RT2/PRICK
21	O	PE7	51	—	GND	81	I	PA0	111	I	RD2/PRIDR
22	O	PE6	52	I	$\overline{\text{RESET}}$	82	I	CK8K1	112	—	GND
23	O	PE5	53	—	GND	83	I	CK64K1	113	O	NETW8K
24	O	PE4	54	O	PC7	84	O	TBA1	114	I	$\overline{\text{TDMSL}}$
25	—	GND	55	O	PC6	85	I	RBA1	115	I	TDMOP
26	O	PE3	56	O	PC5	86	O	TBB1	116	O	TDMFS
27	O	PE2	57	O	PC4	87	I	RBB1	117	O	TDMCK
28	O	PE1	58	O	PC3	88	I	CK8K2	118	O	TDMDR
29	O	PE0	59	O	PC2	89	I	CK64K2	119	I	TDMDX
30	—	VDD	60	—	GND	90	—	VDD	120	—	GND


2 VA0
3 VA1
4 VA2
38 HA0
37 HA1
36 HA2
35 HA3
81 PA0
80 PA1
79 PA2
78 PA3
77 PA4
76 PA5
74 PA6
73 PA7
85 RBA1
87 RBB1
93 RBA2
95 RBB2
99 RBA3
101 RBB3
63 XIN
67 TEST
71 PB
82 CK8K1
83 CK64K1
88 CK8K2
89 CK64K2
96 CK8K3
97 CK64K3
104 ST1
106 RT1
107 RD1
8 VCS
9 VRD
11 VWR
34 HCS
39 HRD
40 HWR
52 RESET
103 NETINT
114 TDMSL
108 ST2/PRIFS
110 RT2/PRICK
111 RD2/PRIDR
115 TDMOP
119 TDMDX
VD0 18
VD1 17
VD2 16
VD3 14
VD4 13
VD5 12
VD6 7
VD7 6
HD0 50
HD1 49
HD2 48
HD3 47
HD4 45
HD5 44
HD6 43
HD7 42
PC0 70
PC1 69
PC2 59
PC3 58
PC4 57
PC5 56
PC6 55
PC7 54
PE0 29
PE1 28
PE2 27
PE3 26
PE4 24
PE5 23
PE6 22
PE7 21
PF 20
HINT 32
XOUT 62
CLK12M 65
PD 72
TBA1 84
TBB1 86
TBA2 92
TBB2 94
TBA3 98
TBB3 100
SD1 105
SD2/PRIDX 109
NETW8K 113
TDMFS 116
TDMCK 117
TDMDR 118

INPUT

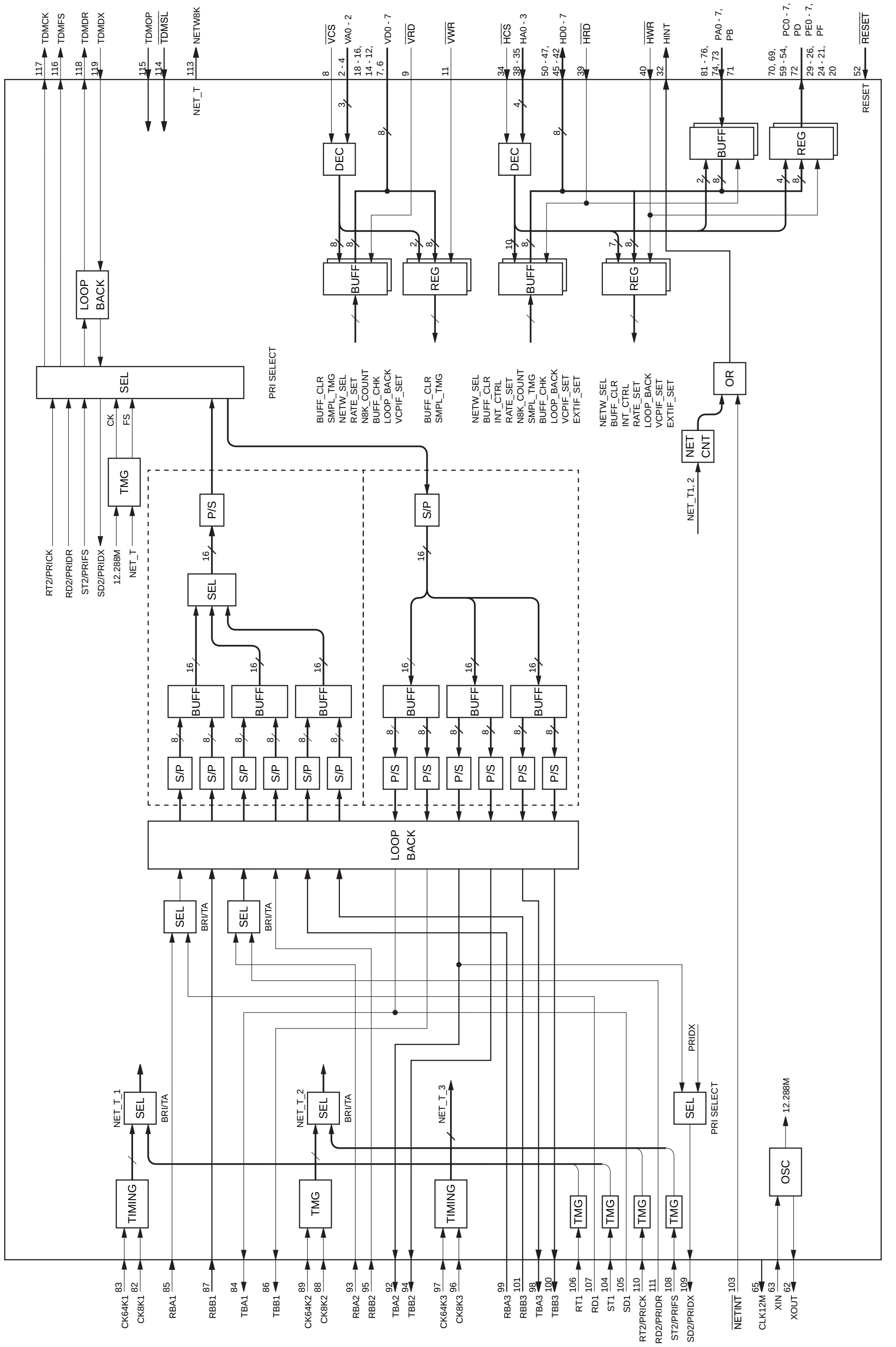
CK64K1 - 3 ; EACH 64kHz CLOCK FOR ISDN BRI
CK8K1 - 3 ; EACH 8kHz (OCTET TIMING) CLOCK FOR ISDN BRI
HA0 - 3 ; ADDRESS FROM THE HOST CPU
$\overline{\text{HCS}}$; CHIP SELECT FROM THE HOST CPU
$\overline{\text{HRD}}$; READ ENABLE FROM THE HOST CPU
$\overline{\text{HWR}}$; WRITE PULSE FROM THE HOST CPU
$\overline{\text{NETINT}}$; INTERRUPT
PA0 - 7, PB ; INPUT PORTS
RBA1 - 3, RBB1 - 3 ; EACH RECEIVING DATA FOR ISDN BRI
RD1 ; RECEIVING DATA FOR EXCLUSIVE USE LINE (TA) I/F
RD2/PRIDR ; RECEIVING DATA FOR EXCLUSIVE USE LINE (TA) I/F
$\overline{\text{RESET}}$; RESET
RT1 ; RECEIVING TIMING FOR EXCLUSIVE USE LINE (TA) I/F
RT2/PRICK ; RECEIVING TIMING FOR EXCLUSIVE USE LINE (TA) I/F
ST1 ; TRANSMITTING TIMING FOR EXCLUSIVE USE LINE (TA) I/F
ST2/PRIFS ; TRANSMITTING TIMING FOR EXCLUSIVE USE LINE (TA) I/F
TDMDX ; SERIAL DATA FOR TDM BUS
$\overline{\text{TEST}}$; TEST MODE SETTING TERMINAL
TDMOP ; SERIAL DATA FROM THE SECOND VCP
$\overline{\text{TDMSL}}$; IN PRI MODE, DURING THIS TERMINAL IS ACTIVE, TREATS DATA FROM TDMDR AS INPUT SIGNAL FROM TDMOP
VA0 - 2 ; ADDRESS FROM VCP
$\overline{\text{VCS}}$; CHIP SELECT FROM VCP
$\overline{\text{VRD}}$; READ ENABLE FROM VCP
$\overline{\text{VWR}}$; WRITE PULSE FROM VCP
XIN ; CRYSTAL OSCILLATOR (12.288MHz)

OUTPUT

CLK12M ; 12.288MHz CLOCK
HINT ; INTERRUPT TO THE HOST CPU
NETW8K ; 8kHz PULSE SIGNAL DIVIDE CIRCUIT CLOCK
PC0 - 7, PD, PE0 - 7, PF ; OUTPUT PORTS
SD1 ; TRANSMITTING DATA FOR EXCLUSIVE USE LINE (TA) I/F
SD2/PRIDX ; TRANSMITTING DATA FOR EXCLUSIVE USE LINE (TA) I/F
TBA1 - 3, TBB1 - 3 ; EACH TRANSMITTING DATA FOR ISDN BRI
TDMCK ; CLOCK (3.072MHz) FOR TDM BUS
TDMDR ; SERIAL DATA FOR TDM BUS
TDMFS ; FRAME SYNC (8kHz) FOR TDM BUS
XOUT ; CRYSTAL OSCILLATOR (12.288MHz)

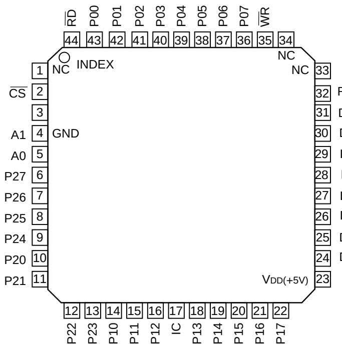
INPUT/OUTPUT

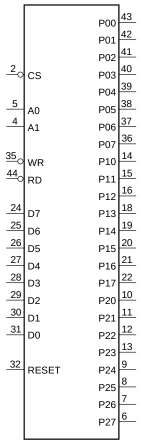
HD0 - 7 ; DATA BUS FROM THE HOST CPU
VD0 - 7 ; DATA BUS FROM VCP


TDMCK
TDMFS
TDMDR
TDMDX
TDMOP
TDMSL
NETW8K
NET_T
VCS
VA0 - 2
VD0 - 7
VRD
VWR
HCS
HA0 - 3
HD0 - 7
HRD
HWR
HINT
PA0 - 7, PB
PC0 - 7, PD
PE0 - 7, PF
RESET
DEC
BUFF
REG
LOOP BACK
SEL
PRI SELECT
BUFF_CLR
SMPL_TMG
NETW_SEL
RATE_SET
N8K_COUNT
BUFF_CHK
LOOP_BACK
VCPIF_SET
INT_CTRL
EXTIF_SET
OR
NET CNT
NET_T1, 2
TMG
CK
FS
RT2/PRICK
RD2/PRIDR
ST2/PRIFS
SD2/PRIDX
12.288M
P/S
S/P
BRI/TA
NET_T_1
NET_T_2
NET_T_3
TIMING
PRIDX
OSC
CK64K1
CK8K1
RBA1
RBB1
TBA1
TBB1
CK64K2
CK8K2
RBA2
RBB2
TBA2
TBB2
CK64K3
CK8K3
RBA3
RBB3
TBA3
TBB3
RT1
RD1
ST1
SD1
RT2/PRICK
RD2/PRIDR
ST2/PRIFS
SD2/PRIDX
NETINT
CLK12M
XIN
XOUT

UPD71055GB-3B4 (NEC)FLAT PACKAGE

C-MOS PARALLEL INTERFACE UNIT
—TOP VIEW—


INDEX
1 NC
2 CS
3
4 A1 GND
5 A0
6 P27
7 P26
8 P25
9 P24
10 P20
11 P21
12 P22
13 P23
14 P10
15 P11
16 P12
17 IC
18 P13
19 P14
20 P15
21 P16
22 P17
23 VDD(+5V)
24 D7
25 D6
26 D5
27 D4
28 D3
29 D2
30 D1
31 D0
32 RESET
33 NC
34 NC
35 WR
36 P07
37 P06
38 P05
39 P04
40 P03
41 P02
42 P01
43 P00
44 RD

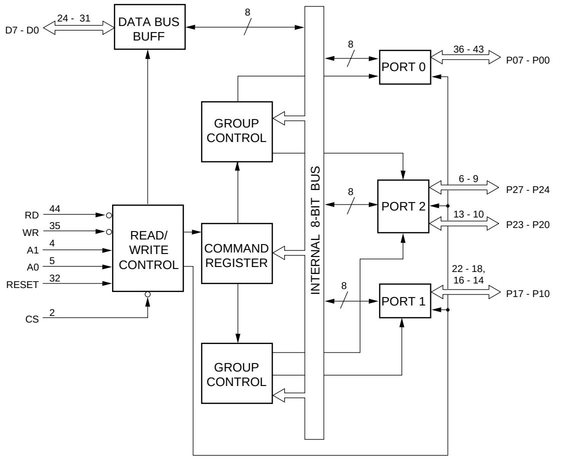

2 CS
5 A0
4 A1
35 WR
44 RD
24 D7
25 D6
26 D5
27 D4
28 D3
29 D2
30 D1
31 D0
32 RESET
P00 43
P01 42
P02 41
P03 40
P04 39
P05 38
P06 37
P07 36
P10 14
P11 15
P12 16
P13 18
P14 19
P15 20
P16 21
P17 22
P20 10
P21 11
P22 12
P23 13
P24 9
P25 8
P26 7
P27 6

A1, A0	; ADDRESS		P17 - P10	; PORT 1
CS	; CHIP SELECT		P27 - P20	; PORT 2
D7 - D0	; DATA BUS		RD	; READ STROBE
P07 - P00	; PORT 0		WR	; WRITE STROBE

IC ; INTERNALLY CONNECTED

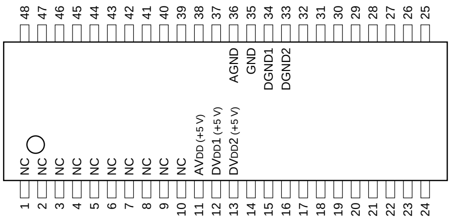
CS	RD	WR	A1	A0	OPERATION	CPU ACTION
0	0	1	0	0	PORT0 → DATA • BUS	INPUT
0	0	1	0	1	PORT1 → DATA • BUS	INPUT
0	0	1	1	0	PORT2 → DATA • BUS	INPUT
0	0	1	1	1	DISABLE	
0	0	0	×	×		
0	1	0	0	0	DATA • BUS → PORT0	OUTPUT
0	1	0	0	1	DATA • BUS → PORT1	OUTPUT
0	1	0	1	0	DATA • BUS → PORT2	OUTPUT
0	1	0	1	1	DATA • BUS → COMMAND REGISTER	OUTPUT
0	1	1	×	×	HIGH IMPEDANCE	
1	×	×	×	×		

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE


D7 - D0
24 - 31
DATA BUS BUFF
8
36 - 43
PORT 0
P07 - P00
GROUP CONTROL
6 - 9
P27 - P24
PORT 2
13 - 10
P23 - P20
RD 44
WR 35
A1 4
A0 5
RESET 32
CS 2
READ/ WRITE CONTROL
COMMAND REGISTER
INTERNAL 8-BIT BUS
22 - 18, 16 - 14
PORT 1
P17 - P10
GROUP CONTROL

UPD9903GT (NEC)

C-MOS DIGITAL CODEC
—TOP VIEW—


48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25
AGND
GND
DGND1
DGND2
NC NC NC NC NC NC NC NC NC NC
AVDD (+5 V)
DVDD1 (+5 V)
DVDD2 (+5 V)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

(AVDD = +5 V, DVDD = +5 V)

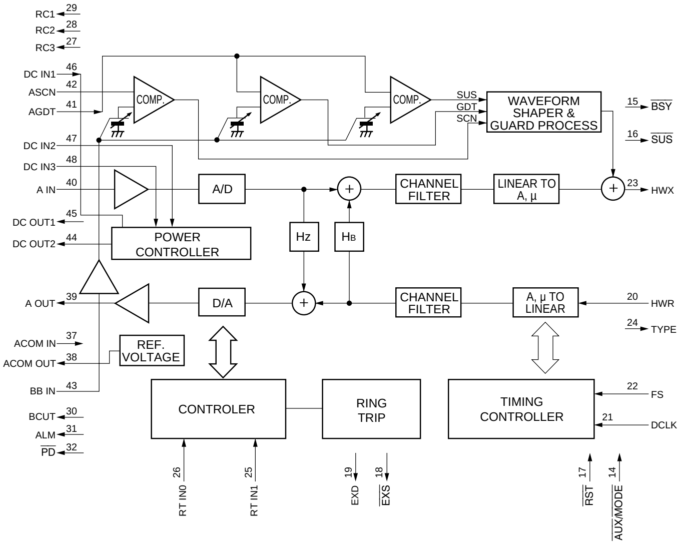
PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	—	NC	13	—	DVDD2	25	I	RT IN1	37	I	ACOM IN
2	—	NC	14	I	AUX/MODE	26	I	RT IN0	38	O	ACOM OUT
3	—	NC	15	O	BSY	27	O	RC3	39	O	A OUT
4	—	NC	16	O	SUS	28	O	RC2	40	I	A IN
5	—	NC	17	I	RST	29	O	RC1	41	I	AGDT
6	—	NC	18	O	EXS	30	O	BCUT	42	I	ASCN
7	—	NC	19	O	EXD	31	O	ALM	43	I	BB IN
8	—	NC	20	I	HWR	32	O	PD	44	O	DC OUT2
9	—	NC	21	I	DCLK	33	—	DGND1	45	O	DC OUT1
10	—	NC	22	I	FS	34	—	DGND2	46	I	DC IN1
11	—	AVDD	23	O	HWX	35	—	GND	47	I	DC IN2
12	—	DVDD1	24	O	TYPE	36	—	AGND	48	I	DC IN3

INPUT

ACOM IN	: ANALOG COMMON VOLTAGE
AGDT	: ANALOG GROUND DETECTION SIGNAL
A IN	: ANALOG SIGNAL
AUX/MODE	: EXTERNAL SIGNAL/MODE CONTROL SET
BB IN	: VBB VOLTAGE INFORMATION
DC IN1 - DC IN3	: DC FEEDBAFCK CONTROL
DCLK	: DATA CLOCK
FS	: FRAME SYNCHRONOUS CLOCK
HWR	: RECEIVE HIGHWAY DATA
RST	: RESET
RT IN0, RT IN1	: RING TRIP

OUTPUT

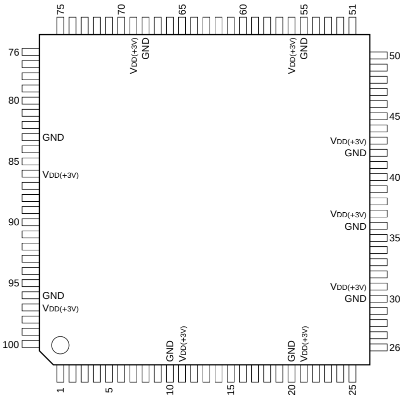
ACOM OUT	: ANALOG COMMON VOLTAGE
ALM	: ALARM
A OUT	: ANALOG SIGNAL
ASCN	: ANALOG LOOP DETECTION SIGNAL
BCUT	: BATTERY FEED CUT
BSY	: BUSY SIGNAL
DC OUT1, DC OUT2	: DC FEEDBACK CONTROL
EXD	: EXPANSION PORT DATA
EXS	: EXPANSION PORT SYNCHRONIZATION
HWX	: TRANSMIT HIGHWAY DATA
PD	: POWER DOWN CONTROL
RC1 - RC3	: RELAY CONTROL
SUS	: SUSPEND SIGNAL
TYPE	: TYPE SIGNAL


RC1 29
RC2 28
RC3 27
DC IN1 46
ASCN 42
AGDT 41
DC IN2 47
DC IN3 48
A IN 40
DC OUT1 45
DC OUT2 44
A OUT 39
ACOM IN 37
ACOM OUT 38
BB IN 43
BCUT 30
ALM 31
PD 32
COMP.
COMP.
COMP.
SUS
GDT
SCN
WAVEFORM SHAPER & GUARD PROCESS
15 BSY
16 SUS
A/D
CHANNEL FILTER
LINEAR TO A, μ
23 HWX
POWER CONTROLLER
Hz
HB
D/A
CHANNEL FILTER
A, μ TO LINEAR
20 HWR
24 TYPE
REF. VOLTAGE
CONTROLER
RING TRIP
TIMING CONTROLLER
22 FS
21 DCLK
26 RT IN0
25 RT IN1
19 EXD
18 EXS
17 RST
14 AUX/MODE

UPD77017GC-030-9EU (NEC)

C-MOS 16-BIT DIGITAL SIGNAL PROCESSOR

—TOP VIEW—


75
70
65
60
55
51
76
80
85
90
95
100
50
45
40
35
30
26
1
5
10
15
20
25
VDD(+3V)
GND
GND
VDD(+3V)
GND
VDD(+3V)
VDD(+3V)
GND
VDD(+3V)
GND
VDD(+3V)
GND
GND
VDD(+3V)
GND
VDD(+3V)

(VDD = +3V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	RESET	21	—	VDD	41	I/O	D4	61	I	SI2	81	I	HA0
2	I	INT4	22	O	DA3	42	—	GND	62	I/O	P3	82	I	HA1
3	I	INT3	23	O	DA2	43	—	VDD	63	I/O	P2	83	—	GND
4	I	INT2	24	O	DA1	44	I/O	D3	64	I/O	P1	84	I	X2
5	I	INT1	25	O	DA0	45	I/O	D2	65	I/O	P0	85	I	X1
6	I	I.C.	26	I/O	D15	46	I/O	D1	66	O	HRE	86	—	VDD
7	O	X/Y	27	I/O	D14	47	I/O	D0	67	O	HWE	87	O	CLKOUT
8	O	DA13	28	I/O	D13	48	I	SI1	68	—	GND	88	O	TDO
9	O	DA12	29	I/O	D12	49	I	SIEN1	69	—	VDD	89	O	TICE
10	—	GND	30	—	GND	50	I	SCK1	70	I/O	HD7	90	I	TCK
11	—	VDD	31	—	VDD	51	O	SIAK1	71	I/O	HD6	91	I	TDI
12	O	DA11	32	I/O	D11	52	O	SO1	72	I/O	HD5	92	I	TMS
13	O	DA10	33	I/O	D10	53	O	SORQ1	73	I/O	HD4	93	I	HOLDRQ
14	O	DA9	34	I/O	D9	54	I	SOEN1	74	I/O	HD3	94	O	HOLDAK
15	O	DA8	35	I/O	D8	55	—	GND	75	I/O	HD2	95	O	MWR
16	O	DA7	36	—	GND	56	—	VDD	76	I/O	HD1	96	—	GND
17	O	DA6	37	—	VDD	57	I	SOEN2	77	I/O	HD0	97	—	VDD
18	O	DA5	38	I/O	D7	58	O	SO2	78	I	HCS	98	O	MRD
19	O	DA4	39	I/O	D6	59	I	SCK2	79	I	HRD	99	O	BSTB
20	—	GND	40	I/O	D5	60	I	SIEN2	80	I	HWR	100	I	WAIT

INPUT

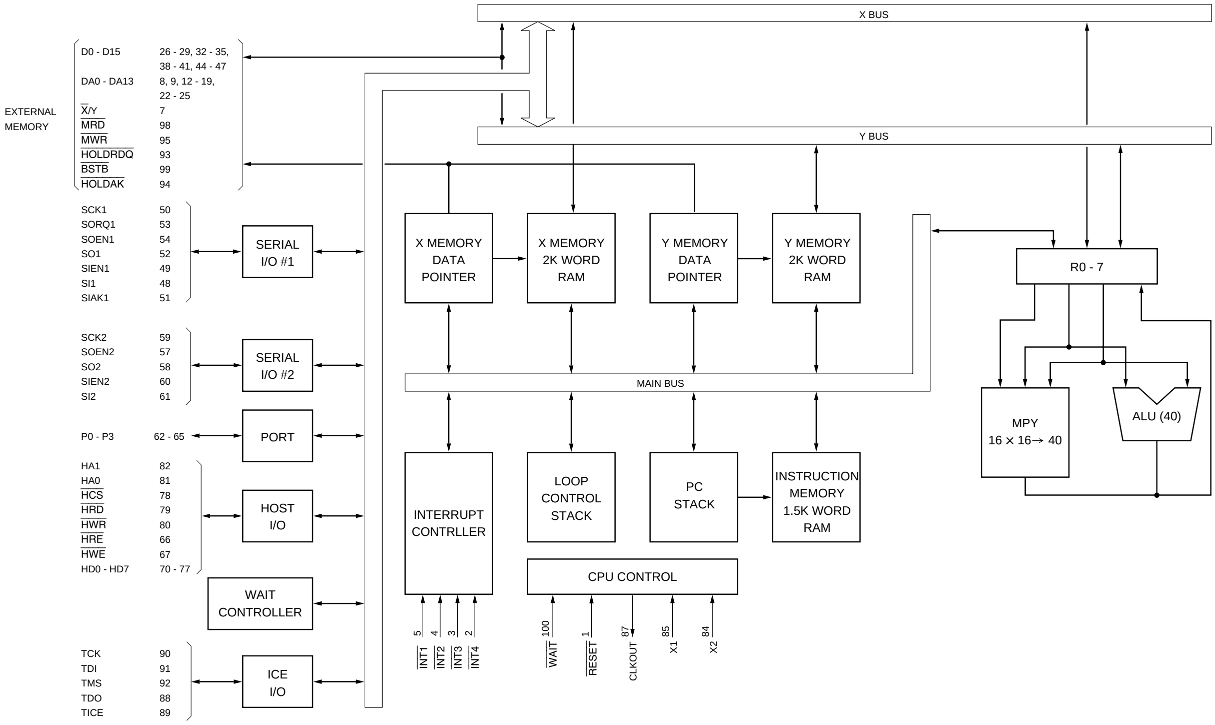
HA0, HA1 ; HD7 - HD0 ACCESS REGISTERS POINTER
HCS ; HOST CHIP SELECT
HOLDRQ ; HOLD REQUEST
HRD ; HOST READ
HWR ; HOST WRITE
I. C. ; INTERNAL CONNECTED
INT1 - INT4 ; MASKABLE EXTERNAL INTERRUPT
RESET ; INTERNAL SYSTEM RESET
SCK1, SCK2 ; SERIAL CLOCK
SI1, SI2 ; SERIAL DATA
SIEN1, SIEN2 ; SERIAL INPUT ENABLE
SOEN1, SOEN2 ; SERIAL OUTPUT ENABLE
TCK ; TEST CLOCK
TDI ; TEST DATA
TMS ; TEST MODE SELECT
WAIT ; WAIT (0 : WAIT, 1 : NOT WAIT)
X1, X2 ; OSCILLATOR/CLOCK

OUTPUT

BSTB ; BUS STROBE
CLKOUT ; INTERNAL SYSTEM CLOCK
DA0 - DA13 ; EXTERNAL DATA/ MEMORY ADDRESS BUS
HOLDAK ; HOLD ACKNOWLEDGE
HRE ; HOST READ ENABLE
HWE ; HOST WRITE ENABLE
MRD ; EXTERNAL MEMORY READ
MWR ; EXTERNAL MEMORY WRITE
SIAK1 ; SERIAL INPUT ACKNOWREDGE
SO1, SO2 ; SERIAL DATA
SORQ1, ; SERIAL OUTPUT REQUEST
TDO ; TEST DATA
TICE ; TEST IN-CIRCUIT EMULATOR
X/Y ; MEMORY SELECT

INPUT/OUTPUT

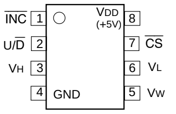
D0 - D15 ; 16-BIT DATA BUS
HD0 - HD7 ; 8-BIT HOST DATA BUS
P0 - P3 ; INPUT/OUTPUT PORT

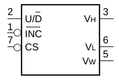

X BUS
Y BUS
EXTERNAL MEMORY
D0 - D15 26 - 29, 32 - 35, 38 - 41, 44 - 47
DA0 - DA13 8, 9, 12 - 19, 22 - 25
X/Y 7
MRD 98
MWR 95
HOLDRQ 93
BSTB 99
HOLDAK 94
SCK1 50
SORQ1 53
SOEN1 54
SO1 52
SIEN1 49
SI1 48
SIAK1 51
SERIAL I/O #1
SCK2 59
SOEN2 57
SO2 58
SIEN2 60
SI2 61
SERIAL I/O #2
P0 - P3 62 - 65
PORT
HA1 82
HA0 81
HCS 78
HRD 79
HWR 80
HRE 66
HWE 67
HD0 - HD7 70 - 77
HOST I/O
WAIT CONTROLLER
TCK 90
TDI 91
TMS 92
TDO 88
TICE 89
ICE I/O
X MEMORY DATA POINTER
X MEMORY 2K WORD RAM
Y MEMORY DATA POINTER
Y MEMORY 2K WORD RAM
R0 - 7
MAIN BUS
MPY 16 × 16→ 40
ALU (40)
INTERRUPT CONTRLLER
LOOP CONTROL STACK
PC STACK
INSTRUCTION MEMORY 1.5K WORD RAM
CPU CONTROL
5 INT1
4 INT2
3 INT3
2 INT4
100 WAIT
1 RESET
87 CLKOUT
85 X1
84 X2

X9313WS (XICOR INC)

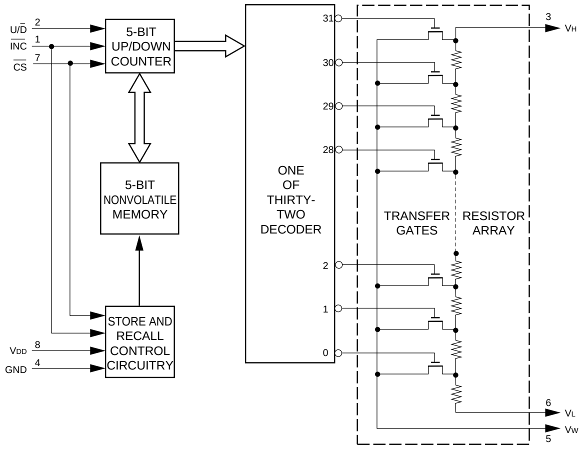
C-MOS DIGITALLY CONTROLLED POTENTIOMETER

—TOP VIEW—


INC 1
U/D 2
VH 3
4 GND
VDD (+5V) 8
7 CS
6 VL
5 VW


2 U/D
1 INC
7 CS
3 VH
6 VL
5 VW

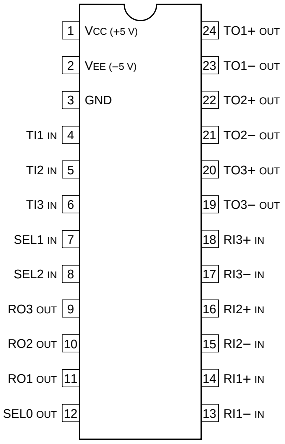
VH ; HIGH TERMINAL
VW ; WIPER TERMINAL
VL ; LOW TERMINAL
U/D ; UP/DOWN INPUT
INC ; INCREMENT INPUT
CS ; CHIP SELECT INPUT

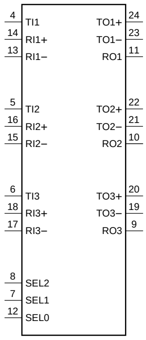

U/D 2
INC 1
CS 7
5-BIT UP/DOWN COUNTER
5-BIT NONVOLATILE MEMORY
STORE AND RECALL CONTROL CIRCUITRY
VDD 8
GND 4
ONE OF THIRTY-TWO DECODER
31
30
29
28
2
1
0
TRANSFER GATES
RESISTOR ARRAY
3 VH
6 VL
VW 5

XR-T3590ID (EXAR)

SINGLE-CHIP V.35 TRANSCEIVER

—TOP VIEW—


1 VCC (+5 V)
2 VEE (–5 V)
3 GND
TI1 IN 4
TI2 IN 5
TI3 IN 6
SEL1 IN 7
SEL2 IN 8
RO3 OUT 9
RO2 OUT 10
RO1 OUT 11
SEL0 OUT 12
24 TO1+ OUT
23 TO1– OUT
22 TO2+ OUT
21 TO2– OUT
20 TO3+ OUT
19 TO3– OUT
18 RI3+ IN
17 RI3– IN
16 RI2+ IN
15 RI2– IN
14 RI1+ IN
13 RI1– IN

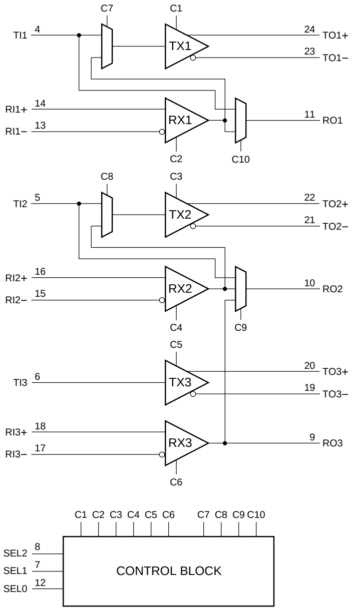

4 TI1
14 RI1+
13 RI1–
5 TI2
16 RI2+
15 RI2–
6 TI3
18 RI3+
17 RI3–
8 SEL2
7 SEL1
12 SEL0
TO1+ 24
TO1– 23
RO1 11
TO2+ 22
TO2– 21
RO2 10
TO3+ 20
TO3– 19
RO3 9

INPUT

RI : RECEIVER
SEL : MODE SELECT
TI : TRANSMITTER

OUTPUT

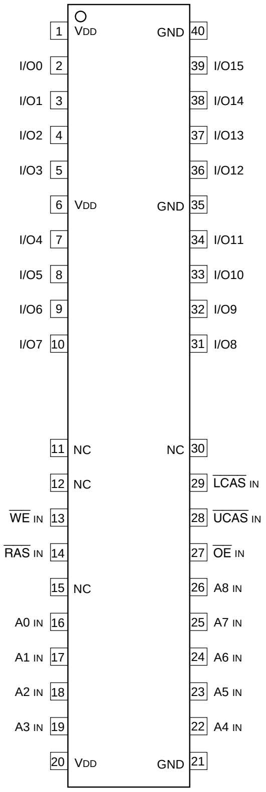
RO : RECEIVER
TO : TRANSMITTER

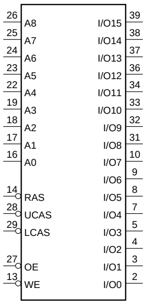

TI1 4
C7
C1
TX1
24 TO1+
23 TO1–
RI1+ 14
RI1– 13
RX1
C2
C10
11 RO1
C8
C3
TI2 5
TX2
22 TO2+
21 TO2–
RI2+ 16
RI2– 15
RX2
C4
C9
10 RO2
C5
TI3 6
TX3
20 TO3+
19 TO3–
RI3+ 18
RI3– 17
RX3
C6
9 RO3
C1 C2 C3 C4 C5 C6 C7 C8 C9 C10
SEL2 8
SEL1 7
SEL0 12
CONTROL BLOCK

HM51S4260CLTT-7 (HITACHI)FLAT PACKAGE

C-MOS (262,144 × 16)-BIT DYNAMIC RAM

—TOP VIEW—


1 VDD
I/O0 2
I/O1 3
I/O2 4
I/O3 5
6 VDD
I/O4 7
I/O5 8
I/O6 9
I/O7 10
11 NC
12 NC
WE IN 13
RAS IN 14
15 NC
A0 IN 16
A1 IN 17
A2 IN 18
A3 IN 19
20 VDD
GND 40
39 I/O15
38 I/O14
37 I/O13
36 I/O12
GND 35
34 I/O11
33 I/O10
32 I/O9
31 I/O8
NC 30
29 LCAS IN
28 UCAS IN
27 OE IN
26 A8 IN
25 A7 IN
24 A6 IN
23 A5 IN
22 A4 IN
GND 21

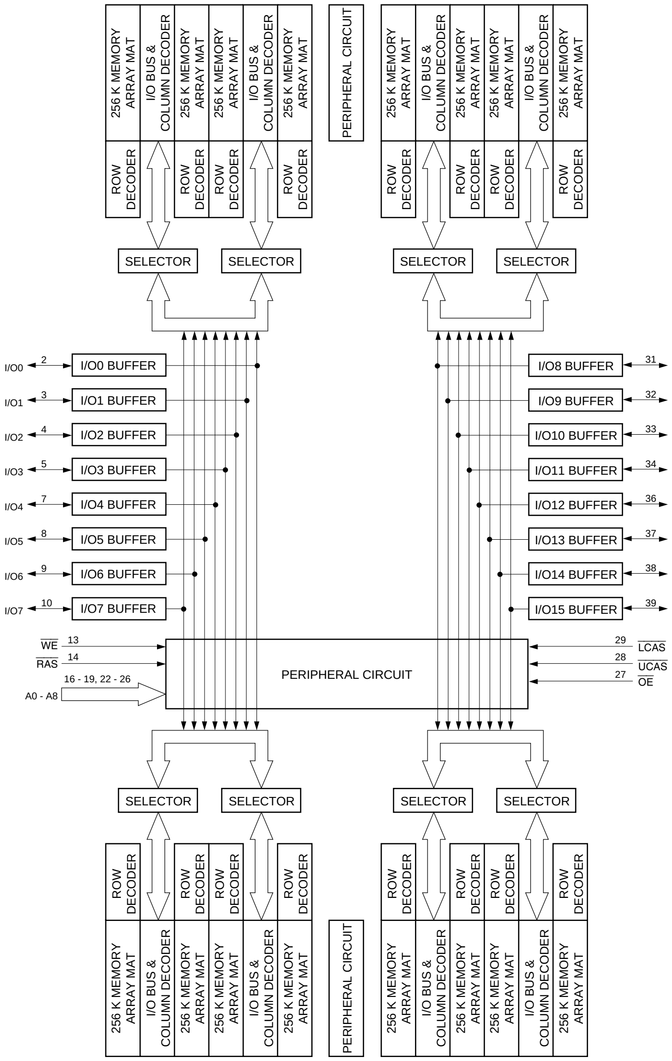

26 A8
25 A7
24 A6
23 A5
22 A4
19 A3
18 A2
17 A1
16 A0
14 RAS
28 UCAS
29 LCAS
27 OE
13 WE
I/O15 39
I/O14 38
I/O13 37
I/O12 36
I/O11 34
I/O10 33
I/O9 32
I/O8 31
I/O7 10
I/O6 9
I/O5 8
I/O4 7
I/O3 5
I/O2 4
I/O1 3
I/O0 2

INPUT

A0 - A8	:	ADDRESS
LCAS	:	COLUMN ADDRESS STROBE
OE	:	OUTPUT ENABLE
RAS	:	ROW ADDRESS STROBE
UCAS	:	COLUMN ADDRESS STROBE
WE	:	READ/WRITE ENABLE

INPUT/OUTPUT

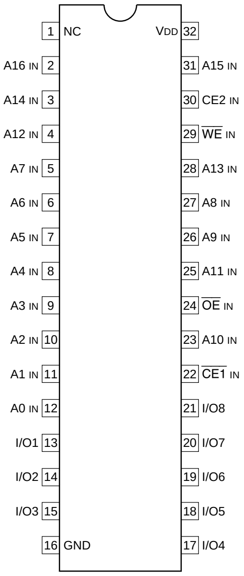
I/O0 - I/O15 : DATA

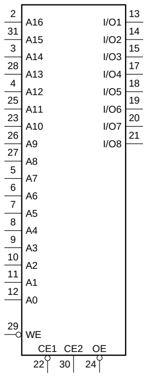

256 K MEMORY ARRAY MAT
I/O BUS & COLUMN DECODER
ROW DECODER
PERIPHERAL CIRCUIT
SELECTOR
I/O0 BUFFER
I/O1 BUFFER
I/O2 BUFFER
I/O3 BUFFER
I/O4 BUFFER
I/O5 BUFFER
I/O6 BUFFER
I/O7 BUFFER
I/O8 BUFFER
I/O9 BUFFER
I/O10 BUFFER
I/O11 BUFFER
I/O12 BUFFER
I/O13 BUFFER
I/O14 BUFFER
I/O15 BUFFER
WE 13
RAS 14
A0 - A8 16 - 19, 22 - 26
LCAS 29
UCAS 28
OE 27
PERIPHERAL CIRCUIT

LC361000AMLL-70-TLA (SANYO)

C-MOS 1 M (131,072 × 8)-BIT STATIC RAM

—TOP VIEW—


1 NC
A16 IN 2
A14 IN 3
A12 IN 4
A7 IN 5
A6 IN 6
A5 IN 7
A4 IN 8
A3 IN 9
A2 IN 10
A1 IN 11
A0 IN 12
I/O1 13
I/O2 14
I/O3 15
16 GND
VDD 32
31 A15 IN
30 CE2 IN
29 $\overline{WE}$ IN
28 A13 IN
27 A8 IN
26 A9 IN
25 A11 IN
24 $\overline{OE}$ IN
23 A10 IN
22 $\overline{CE1}$ IN
21 I/O8
20 I/O7
19 I/O6
18 I/O5
17 I/O4


2 A16
31 A15
3 A14
28 A13
4 A12
25 A11
23 A10
26 A9
27 A8
5 A7
6 A6
7 A5
8 A4
9 A3
10 A2
11 A1
12 A0
29 WE
I/O1 13
I/O2 14
I/O3 15
I/O4 17
I/O5 18
I/O6 19
I/O7 20
I/O8 21
CE1 22
CE2 30
OE 24

INPUT

A0 - A16 : ADDRESS

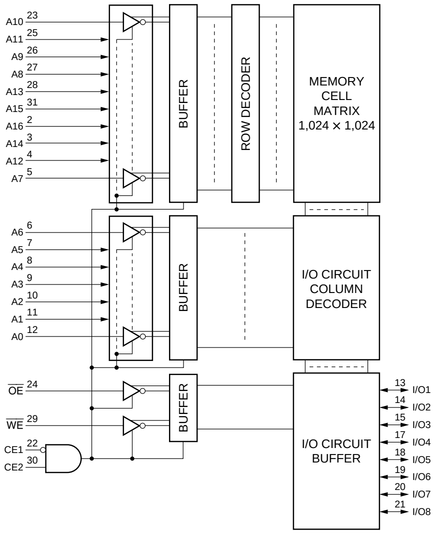
$\overline{CE1}$, CE2 : CHIP ENABLE

$\overline{OE}$: OUTPUT ENABLE

$\overline{WE}$: READ/WRITE ENABLE

INPUT/OUTPUT

I/O1 - I/O8 : DATA


A10 23
A11 25
A9 26
A8 27
A13 28
A15 31
A16 2
A14 3
A12 4
A7 5
A6 6
A5 7
A4 8
A3 9
A2 10
A1 11
A0 12
$\overline{OE}$ 24
$\overline{WE}$ 29
CE1 22
CE2 30
BUFFER
ROW DECODER
MEMORY CELL MATRIX 1,024 × 1,024
BUFFER
I/O CIRCUIT COLUMN DECODER
BUFFER
I/O CIRCUIT BUFFER
13 I/O1
14 I/O2
15 I/O3
17 I/O4
18 I/O5
19 I/O6
20 I/O7
21 I/O8

http://getMANUAL.com

SECTION 8
SPARE PARTS

8-1. NOTES ON SPARE PARTS

(1) Safety Related Components Warning
Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

(2) Standardization of Parts
Spare parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to “accommodating the improved parts and/or engineering changes” or “standardization of genuine parts”.
This manual’s exploded views and electrical spare parts list are indicating the part numbers of “the standardized genuine parts at present” .

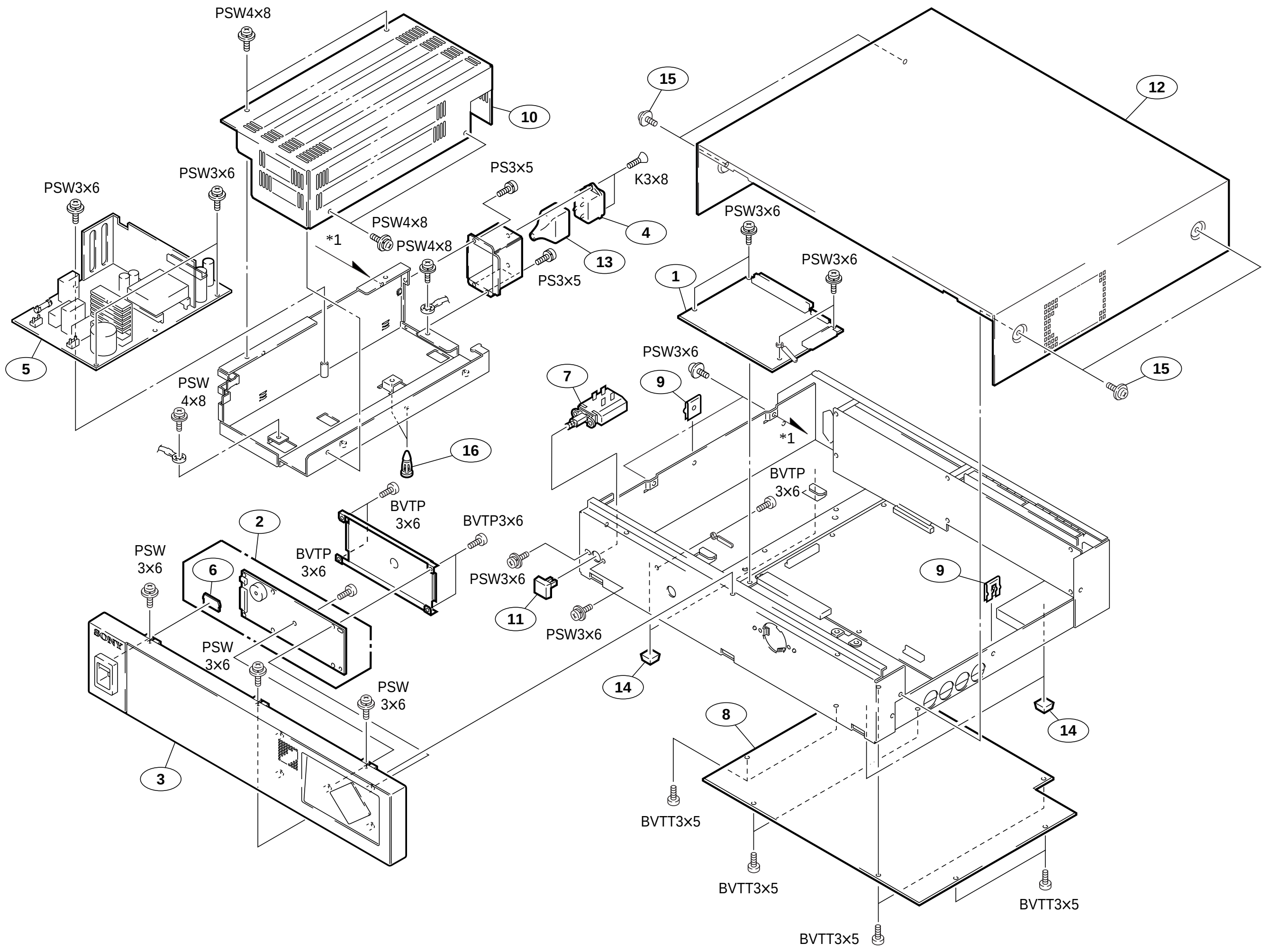
(3) Stock of Parts
Parts marked with “o” SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with “o” will be processed, but allow for additional delivery time.

(4) Units for Capacitors, Inductors and Resistors
The following units are assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors : µF
Inductors : µH
Resistors : Ω

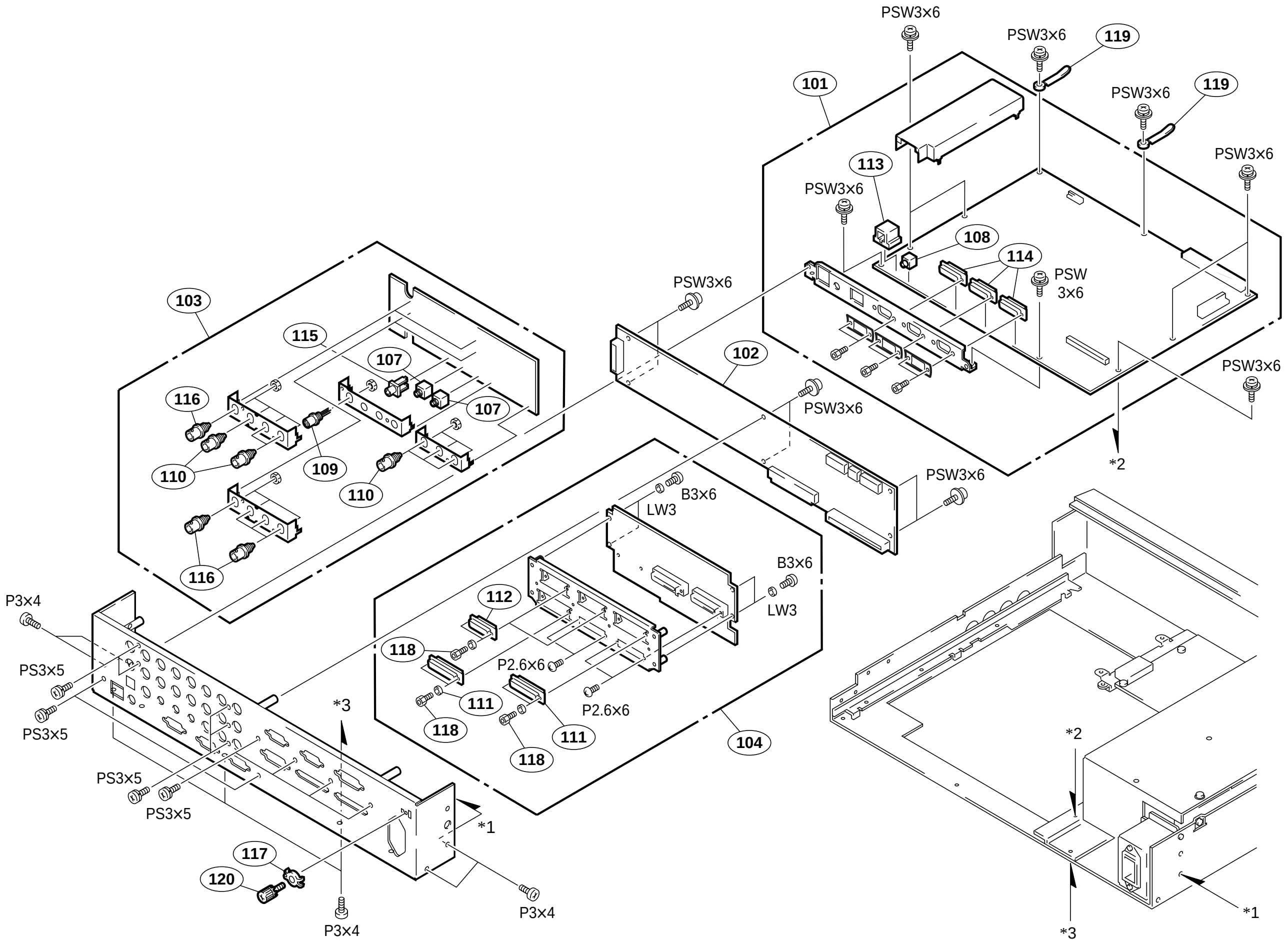
8-2. EXPLODED VIEW

Ornamental Panel Block


PSW4×8
15
12
10
PS3×5
K3×8
PSW3×6
PSW3×6
PSW4×8
*1
PSW4×8
4
13
PS3×5
PSW3×6
PSW3×6
1
5
PSW 4×8
PSW3×6
7
9
15
*1
16
BVTP 3×6
BVTP 3×6
BVTP3×6
2
PSW 3×6
6
BVTP 3×6
PSW3×6
9
11
PSW3×6
PSW 3×6
PSW 3×6
14
8
14
3
BVTT3×5
BVTT3×5
BVTT3×5
BVTT3×5

No.	Part No.	SP	Description
1	A-8272-914-A	o	MOUNTED CIRCUIT BOARD, APR-24
2	A-8273-200-A	o	MOUNTED CIRCUIT BOARD, KY-358
3	X-3604-583-1	o	PARTS ASSY, PANEL, FRONT (for RSE-400/500)
	X-3678-518-5	o	PARTS ASSY, PANEL, FRONT (for PMS-400P/500P)
4	⚠ 1-251-384-11	s	INLET 3P (WITH NOISE FILTER)
5	⚠ 1-468-109-11	s	SWITCHING REGULATOR (for RSE-400/500)
	⚠ 1-468-160-11	s	SWITCHING REGULATOR (for PMS-400P/500P)
6	1-620-916-11	o	PRINTED CIRCUIT BOARD, PE-18
7	⚠ 1-762-896-11	s	SWITCH, POWER
8	3-179-879-01	o	PLATE, BOTTOM
9	3-189-523-01	o	SPRING PLATE (for PMS-400P/500P)
10	3-601-446-02	o	COVER, POWER
11	3-715-610-01	s	KNOB, PS
12	3-738-118-22	o	CASE
13	4-605-511-02	o	COVER, 3P INLET
14	4-611-214-01	s	FOOT, RUBBER
15	4-820-330-21	s	SCREW, CASE
16	4-912-181-11	o	SUPPORT, PC

Connector Panel Block


PSW3×6
PSW3×6
119
101
119
PSW3×6
113
PSW3×6
PSW3×6
108
114
PSW
3×6
103
PSW3×6
115
102
107
PSW3×6
116
107
PSW3×6
109
110
110
PSW3×6
B3×6
LW3
*2
B3×6
LW3
116
P3×4
112
PS3×5
118
P2.6×6
*3
PS3×5
111
P2.6×6
118
111
104
118
*2
PS3×5
PS3×5
*1
117
120
P3×4
P3×4
*1
*3

No.	Part No.	SP	Description
101	A-8316-292-A	o	MOUNTED CIRCUIT BOARD, DPR-86AHN (for RSE-500:Serial No. 10001 through 10030)
	A-8319-028-A	o	MOUNTED CIRCUIT BOARD, DPR-86AHNR (for RSE-500:Serial No. 10031 and higher)
	A-8318-326-A	o	MOUNTED CIRCUIT BOARD, DPR-86AHP (for PMS-500P)
	A-8318-328-A	o	MOUNTED CIRCUIT BOARD, DPR-86AMP (for PMS-400P)
	A-8318-628-A	o	MOUNTED CIRCUIT BOARD, DPR-86AMN (for RSE-400)
102	A-8316-293-A	o	MOUNTED CIRCUIT BOARD, IF-588AH
103	A-8318-416-A	o	MOUNTED CIRCUIT BOARD, CN-1308AH (for RSE-500/PMS-500P)
	A-8318-418-A	o	MOUNTED CIRCUIT BOARD, CN-1308AM (for RSE-400/PMS-400P)
104	A-8316-295-A	o	MOUNTED CIRCUIT BOARD, CN-1426A
107	1-507-800-12	s	JACK
108	1-507-980-41	s	JACK
109	1-561-376-11	s	CONNECTOR (S) 4P
110	1-562-227-51	s	RECEPTACLE, BNC (WITH EARTH PLATE)
111	1-563-826-21	s	SOCKET, D-SUB CONNECTOR 15P
112	1-563-890-21	s	SOCKET, D-SUB CONNECTOR 9P
113	1-750-944-11	s	JACK, MODULAR (8P-8C)
114	1-766-194-11	o	CONNECTOR, D-SUB 9P
115	1-766-326-11	s	JACK, PIN (MOUNT TYPE) 1P
116	1-766-738-11	s	CONNECTOR, BNC (WITH SW)
117	2-068-008-00	s	WASHER
118	3-177-691-01	s	HEXAGONAL BLOCK
119	3-701-822-00	o	HOLDER, WIRE
120	3-706-165-00	s	SCREW

8-3. ELECTRICAL PARTS LIST

APR-24 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-914-A	o	MOUNTED CIRCUIT BOARD, APR-24
C1	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C2-4	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C5-9	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C10	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C11	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C14	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C17	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C18	1-126-401-11	s	ELECT, CHIP 1uF 20% 50V
C19	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C20	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C21	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C22	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C25	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C30	1-104-601-11	s	ELECT 10uF 20% 10V
C31	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C33	1-163-023-00	s	CERAMIC, CHIP 0.015uF 10% 50V
C34	1-163-011-11	s	CERAMIC, CHIP 0.0015uF 10% 50V
C35	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C36	1-126-397-11	s	ELECT, CHIP 33uF 20% 25V
C37	1-126-404-11	s	ELECT, CHIP 4.7uF 20% 50V
C38	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C39	1-126-397-11	s	ELECT, CHIP 33uF 20% 25V
C40	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C41	1-126-397-11	s	ELECT, CHIP 33uF 20% 25V
C42	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C43	1-126-397-11	s	ELECT, CHIP 33uF 20% 25V
C44	1-126-397-11	s	ELECT, CHIP 33uF 20% 25V
C45	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C46	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C47	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C48	1-164-182-11	s	CERAMIC, CHIP 0.0033uF 10% 100V
C49	1-163-137-00	s	CERAMIC, CHIP 680PF 5% 50V
C50	1-163-137-00	s	CERAMIC, CHIP 680PF 5% 50V
C51	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C52	1-126-397-11	s	ELECT, CHIP 33uF 20% 25V
C53	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C54	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C55	1-126-397-11	s	ELECT, CHIP 33uF 20% 25V
C56	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C57	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C58	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C59-66	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C67	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C69	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C70	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C71	1-128-594-11	s	ELECT, NONPOLAR 1uF 20% 50V
C72	1-128-594-11	s	ELECT, NONPOLAR 1uF 20% 50V
C73	1-163-263-11	s	CERAMIC, CHIP 330PF 5% 50V
C74	1-126-404-11	s	ELECT, CHIP 4.7uF 20% 50V
C75	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C76	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C77	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C78	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C79	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C80	1-126-402-11	s	ELECT, CHIP 2.2uF 20% 50V
C81	1-126-402-11	s	ELECT, CHIP 2.2uF 20% 50V
C82	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V

(APR-24 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C83	1-126-402-11	s	ELECT, CHIP 2.2uF 20% 50V
C84	1-126-402-11	s	ELECT, CHIP 2.2uF 20% 50V
C87	1-117-137-11	s	ELECT 33uF 20% 10V
C88	1-117-137-11	s	ELECT 33uF 20% 10V
C89	1-163-259-91	s	CERAMIC 220PF 5% 50V
C90	1-163-259-91	s	CERAMIC 220PF 5% 50V
C91	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C92	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C94	1-117-137-11	s	ELECT 33uF 20% 10V
C95	1-163-259-91	s	CERAMIC 220PF 5% 50V
C98	1-163-239-11	s	CERAMIC, CHIP 33PF 5% 50V
C99-107	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C108	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C109-123	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C126	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C127	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C128	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C129	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C130	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C131	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C133	1-128-594-11	s	ELECT, NONPOLAR 1uF 20% 50V
C137	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C138	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C140	1-163-137-00	s	CERAMIC, CHIP 680PF 5% 50V
C141	1-128-593-11	s	ELECT, NONPOLAR 0.47uF 20% 50V
C142	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C143	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C144	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C145	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C146	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C147	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C148	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C149	1-104-601-11	s	ELECT 10uF 20% 10V
C150	1-163-137-00	s	CERAMIC, CHIP 680PF 5% 50V
C153	1-163-135-00	s	CERAMIC, CHIP 560PF 5% 50V
C154	1-163-127-00	s	CERAMIC, CHIP 270PF 5% 50V
C155	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
CN501	1-580-195-21	s	CONNECTOR, PC BOARD 100P
CN502	1-564-011-11	o	CONNECTOR, 12P, MALE
CN503	1-774-777-21	s	CONNECTOR, PC BOARD 40P
IC1	8-759-186-02	s	IC TC74VHCT245F(EL)
IC2	8-759-272-21	s	IC TC74VHCT541F
IC3	8-759-185-80	s	IC TC74VHCT138F(EL)
IC4	8-759-241-59	s	IC TC74HCT574AF
IC5	8-759-272-21	s	IC TC74VHCT541F
IC6	8-759-185-80	s	IC TC74VHCT138F(EL)
IC7	8-759-267-80	s	IC X9313WS
IC11	8-759-141-05	s	IC UPC4574G2
IC12	8-759-267-80	s	IC X9313WS
IC14	8-759-141-05	s	IC UPC4574G2
IC15	8-752-357-64	s	IC CXD2570Q
IC16	8-759-272-21	s	IC TC74VHCT541F
IC17	8-759-030-78	s	IC MC34118DW
IC18	8-759-141-05	s	IC UPC4574G2
IC19	8-759-080-91	s	IC MM74HC4046M
IC20	8-759-423-93	o	IC PLSI2032-80LJ44-MON05V01
IC21	8-759-272-21	s	IC TC74VHCT541F
IC22	8-759-272-21	s	IC TC74VHCT541F

(APR-24 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC24	8-759-386-89	s	IC UPD77017GC-030-9EU
IC25-28	8-759-186-55	s	IC TC74VHC165F(EL)
IC29	8-759-701-75	s	IC NJM7805FA
IC30	8-759-176-36	s	IC RH5RE30AA
IC31	8-759-701-84	s	IC NJM7905FA
IC32	8-759-141-05	s	IC UPC4574G2
L1	1-408-785-21	s	INDUCTOR CHIP 47uH
Q1-4	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
R1	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R2	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R3	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R4	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R5	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R6	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R7	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R9	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R13	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R16	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R17	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R28	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R29	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R30	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R35	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R37	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R38	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R39	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R40	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R41	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R42	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R43	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R44	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R45	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R46-51	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R52	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R53	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R54	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R55	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R56	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R57	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R58	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R59	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R60	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R61	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R62	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R63	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R64	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R65	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R66	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R69	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R70	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R71	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R72	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R73	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R74	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R75	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
R76	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R77	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W

(APR-24 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R78	1-216-099-00	s	METAL, CHIP 120K 5% 1/10W
R79	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R80	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R81	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R82	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R83	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R86	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R87	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R88	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R89	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R90	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R91	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R92	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R94	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R95	1-216-103-00	s	METAL, CHIP 180K 5% 1/10W
R96	1-216-103-00	s	METAL, CHIP 180K 5% 1/10W
R97	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R98	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R99	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
R100	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R101	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R102	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R103	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R104	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R105	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R106	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R107	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R108	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R109	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R110	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R111	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R112	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R113	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R114	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R115	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R116	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R117	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R119	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R120	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R121	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R122	1-216-015-00	s	METAL, CHIP 39 5% 1/10W
R127	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R128	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R129	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R130	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R133	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R134	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R136	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R137	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R138	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R139	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R140	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R141	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R142	1-216-117-00	s	METAL, CHIP 680K 5% 1/10W
R143	1-216-105-91	s	METAL, CHIP 220K 5% 1/10W
R146	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R147	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R148	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R149	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W

(APR-24 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R150	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R151	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R152	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R153	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R154	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R155	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
RB1-7	1-239-309-11	s	RESISTOR BLOCK, CHIP 100KX8
RB10	1-239-309-11	s	RESISTOR BLOCK, CHIP 100KX8
RB11	1-239-309-11	s	RESISTOR BLOCK, CHIP 100KX8
RV4	1-238-857-11	s	RES, ADJ, METAL 22K
SW1	1-570-134-11	s	SWITCH, SLIDE
X1	1-760-996-21	s	CRYSTAL 4.125MHz

CN-1308A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8318-416-A	o	MOUNTED CIRCUIT BOARD, CN-1308AH (RSE-500/PMS-500P)
1pc	A-8318-418-A	o	MOUNTED CIRCUIT BOARD, CN-1308AM (RSE-400/PMS-400P)
1pc	1-507-800-00	s	JACK
1pc	1-561-376-00	s	CONNECTOR (S) 4P
3pcs	1-562-227-51	s	RECEPTACLE, BNC (for RSE-400/PMS-400P)
4pcs	1-562-227-51	s	RECEPTACLE, BNC (for RSE-500/PMS-500P)
1pc	1-766-326-11	s	JACK, PIN (MOUNT TYPE) 1P
2pcs	1-766-738-11	s	BNC (WITH SW)
C1	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C2	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
CN301	1-564-011-11	o	CONNECTOR, 12P, MALE
CN302	1-565-089-11	o	CONNECTOR, 40P, FEMALE
CN303	1-564-002-11	s	PIN, CONNECTOR 3P
D1	8-719-158-15	s	DIODE RD5.6SB
D2	8-719-158-15	s	DIODE RD5.6SB
D4	8-719-158-15	s	DIODE RD5.6SB
D5	8-719-158-15	s	DIODE RD5.6SB
D7	8-719-158-15	s	DIODE RD5.6SB
D8	8-719-158-15	s	DIODE RD5.6SB
FB1-19	1-543-644-11	s	BEAD, FERRITE (CHIP)
FL1-5	1-239-558-11	s	FILTER, CHIP EMI
R1-8	1-220-256-11	s	METAL, CHIP 75 5% 1/4W
R9-11	1-220-256-11	s	METAL, CHIP 75 5% 1/4W (for RSE-400/PMS-400P)
R9	1-216-041-00	s	METAL, CHIP 470 5% 1/10W (for RSE-500/PMS-500P)
R10	1-220-256-11	s	METAL, CHIP 75 5% 1/4W (for RSE-500/PMS-500P)
R11	1-220-256-11	s	METAL, CHIP 75 5% 1/4W (for RSE-500/PMS-500P)

CN-1426 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8316-295-A	o	MOUNTED CIRCUIT BOARD, CN-1426A
8pcs	3-177-691-01	s	HEXAGONAL BLOCK
4pcs	7-621-259-45	s	SCREW +P 2.6X6
4pcs	7-682-547-04	s	SCREW +B 3X6
4pcs	7-623-422-07	s	LW 3, TYPE B
CN23	1-563-826-21	s	CONNECTOR, D-SUB 15P
CN24	1-774-137-11	s	SOCKET, CONNECTOR 36P
CN25	1-774-137-11	s	SOCKET, CONNECTOR 36P
CN117	1-563-890-21	s	CONNECTOR, D-SUB 9P, FEMALE
CN119	1-563-890-21	s	CONNECTOR, D-SUB 9P, FEMALE
CN121	1-563-826-21	s	CONNECTOR, D-SUB 15P
CN303	1-774-879-21	s	CONNECTOR, PC BOARD 100P
D1-40	8-719-158-15	s	DIODE RD5.6SB
D41-78	8-719-037-57	s	DIODE RD39SB-T1
D79	8-719-158-55	s	DIODE RD15SB
D80	8-719-158-55	s	DIODE RD15SB
D81	8-719-158-15	s	DIODE RD5.6SB
D82-85	8-719-158-55	s	DIODE RD15SB
D86	8-719-158-15	s	DIODE RD5.6SB
D87-110	8-719-158-55	s	DIODE RD15SB
D111	8-719-158-15	s	DIODE RD5.6SB
D112-115	8-719-158-55	s	DIODE RD15SB
D116	8-719-158-15	s	DIODE RD5.6SB
D117-142	8-719-158-55	s	DIODE RD15SB
FB1-86	1-543-644-11	s	BEAD, FERRITE (CHIP)
FL1	1-239-035-11	s	FILTER, EMI (CHIP)
FL2	1-239-035-11	s	FILTER, EMI (CHIP)
R20-43	1-216-017-91	s	METAL, CHIP 47 5% 1/10W
R56-61	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R62-71	1-216-011-00	s	METAL, CHIP 27 5% 1/10W

DPR-86 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8316-292-A	o	MOUNTED CIRCUIT BOARD, DPR-86AHN (for RSE-500: Serial No. 10001-10030)
1pc	A-8319-028-A	o	MOUNTED CIRCUIT BOARD, DPR-86AHNR (for RSE-500: Serial No. 10031 and higher)
1pc	A-8318-326-A	o	MOUNTED CIRCUIT BOARD, DPR-86AHP (for PMS-500P)
1pc	A-8318-328-A	o	MOUNTED CIRCUIT BOARD, DPR-86AMP (for PMS-400P)
1pc	A-8318-628-A	o	MOUNTED CIRCUIT BOARD, DPR-86AMN (for RSE-400)
2pcs	7-682-947-01	s	SCREW +PSW 3X6
C1	1-163-253-11	s	CERAMIC, CHIP 120PF 5% 50V
C2	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C4	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C5	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C7	1-126-401-11	s	ELECT, CHIP 1uF 20% 50V
C8	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C10	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C12	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C13	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C14	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C15	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C16	1-126-401-11	s	ELECT, CHIP 1uF 20% 50V
C17	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C18	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C19	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C20	1-126-402-11	s	ELECT, CHIP 2.2uF 20% 50V
C21	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C22	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C23	1-163-263-11	s	CERAMIC, CHIP 330PF 5% 50V
C24	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C25	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C26	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C27	1-164-695-11	s	CERAMIC 0.0022uF 5% 50V
C28-30	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C31	1-163-237-11	s	CERAMIC, CHIP 27PF 5% 50V
C32	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C33	1-163-239-11	s	CERAMIC, CHIP 33PF 5% 50V
C34	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C35	1-128-235-11	s	ELECT, CHIP 0.47uF 20% 50V
C36	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C37	1-163-263-11	s	CERAMIC, CHIP 330PF 5% 50V
C38-44	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C45	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C46	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C47	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C48	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C49	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C50	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C51	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C52	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C53	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C54	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C55	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C56-59	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C60	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V

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Ref. No. or Q'ty	Part No.	SP	Description
C61	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C62-67	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C70	1-163-229-11	s	CERAMIC, CHIP12PF 5% 50V (for PMS-500P/400P)
C70	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V (for RSE-500/400)
C72	1-163-229-11	s	CERAMIC, CHIP12PF 5% 50V (for PMS-500P/400P)
C72	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V (for RSE-500/400)
C98	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C100	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C101	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C102	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C103	1-163-239-11	s	CERAMIC, CHIP 33PF 5% 50V
C104	1-163-239-11	s	CERAMIC, CHIP 33PF 5% 50V
C105	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C106	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C107-109	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C110	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C111	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C112	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C113	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C114	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C115	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C116	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C117-125	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V (for RSE-500/PMS-500P)
C126	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C127	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C128	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C129	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C130	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C131	1-163-237-11	s	CERAMIC, CHIP 27PF 5% 50V
C133	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C134	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C135-138	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C139	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V
C141-149	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C150-159	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C161	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C162	1-128-594-11	s	ELECT, NONPOLAR 1uF 20% 50V (for RSE-500/PMS-500P)
C163	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C164	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V (for RSE-500/PMS-500P)
C170	1-128-595-11	s	ELECT, NONPOLAR 2.2uF 20% 50V
C171	1-163-241-11	s	CERAMIC, CHIP 39PF 5% 50V (for RSE-500/400)
C172	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V (for RSE-500)
C173	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V (for RSE-500)
C174	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C202-204	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C223	1-163-239-11	s	CERAMIC, CHIP 33PF 5% 50V
C224	1-163-239-11	s	CERAMIC, CHIP 33PF 5% 50V
C300	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C301	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C302	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C303	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C304	1-126-402-11	s	ELECT, CHIP 2.2uF 20% 50V
C305	1-126-402-11	s	ELECT, CHIP 2.2uF 20% 50V
C306	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C307	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V
C308	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V
C309	1-126-402-11	s	ELECT, CHIP 2.2uF 20% 50V
C310	1-163-227-11	s	CERAMIC, CHIP 10PF 5% 50V
C311-317	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C318	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C319	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C320	1-126-390-11	s	ELECT, CHIP 22uF 20% 6.3V
C321-323	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C324-330	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C500-505	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C551-556	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C594	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C600	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C621	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C622	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C623-647	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C650-658	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C660-666	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C686	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C687	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C689-691	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C699	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C701	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C714-719	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C720	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C901	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C902	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C903	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C906	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C907	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C920	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C921	1-125-447-11	s	DOUBLE LAYERS 1FARAD 5.5V
C922-924	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C926-938	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C941-943	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C945	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C946	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C949	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V (for RSE-500/400, PMS-500P)
C950-964	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C966	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C967	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C968	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C969	1-163-235-11	s	CERAMIC, CHIP 22PF 5% 50V
C970	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C971	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C972	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V (for PMS-400P)

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Ref. No. or Q'ty	Part No.	SP	Description
C973	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V (for RSE-400)
C974-979	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
CN10	1-750-944-11	s	JACK, MODULAR (8P-8C)
CN11-13	1-766-194-11	o	CONNECTOR, D-SUB 9P FEMALE\
CN15	1-507-980-41	s	JACK
CN101	1-779-092-11	s	PIN, CONNECTOR (PC BOARD) 10P
CN102	1-691-735-11	s	HEADER, CONNECTOR PIN 60P
CN103	1-573-600-21	s	CONNECTOR, PC BOARD 100P
CN104	1-564-009-11	o	PIN, CONNECTOR 10P
CN105	1-506-469-11	s	CONNECTOR, 4P, MALE
CNI706	1-540-151-21	s	SOCKET, IC
CV1	1-141-370-11	s	CAP, CHIP TRIMMER
CV2	1-141-370-11	s	CAP, CHIP TRIMMER
D1	8-719-801-78	s	DIODE 1SS184
D100	8-719-210-21	s	DIODE 11EQS04
D101-103	8-719-820-61	s	DIODE 1SS294
D701-720	8-719-107-58	s	DIODE 1S953-7-T1
D901	8-719-801-78	s	DIODE 1SS184
D902-909	8-719-987-43	s	DIODE CL-150PG-CD
D910-917	8-719-158-55	s	DIODE RD15SB
D920-922	8-719-820-61	s	DIODE 1SS294
D925	8-719-158-55	s	DIODE RD15SB
D926	8-719-158-55	s	DIODE RD15SB
D927	8-719-800-76	s	DIODE 1SS226
D930-939	8-719-158-55	s	DIODE RD15SB
FL5	1-239-035-11	s	FILTER, EMI (CHIP)
FL601	1-239-035-11	s	FILTER, EMI (CHIP)
FL901	1-239-035-11	s	FILTER, EMI (CHIP)
FL902	1-239-035-11	s	FILTER, EMI (CHIP)
FL903	1-239-035-11	s	FILTER, EMI (CHIP)
FL904	1-239-035-11	s	FILTER, EMI (CHIP)
FL905	1-239-035-11	s	FILTER, EMI (CHIP)
FL906	1-239-035-11	s	FILTER, EMI (CHIP)
FL907	1-239-035-11	s	FILTER, EMI (CHIP)
FL908	1-239-035-11	s	FILTER, EMI (CHIP)
FL911	1-239-035-11	s	FILTER, EMI (CHIP)
FL912	1-239-035-11	s	FILTER, EMI (CHIP)
IC1	8-759-361-86	s	IC MC44011FN
IC2	8-759-233-66	s	IC TC74HCT04AF
IC3	8-759-186-39	s	IC TC74VHC74F
IC4	8-759-361-85	s	IC MC44140DWR2
IC5	8-759-186-51	s	IC TC74VHC157FS(EL)
IC6	8-759-239-55	s	IC TC74HC123AF
IC7	8-759-239-58	s	IC TC74HC221AF
IC8	8-759-186-53	s	IC TC74VHC163F
IC9	8-759-186-53	s	IC TC74VHC163F
IC10	8-759-186-53	s	IC TC74VHC163F
IC20	8-759-186-38	s	IC TC74VHC32F
IC21	8-759-175-29	s	IC TC74VHC374F
IC24	8-759-175-29	s	IC TC74VHC374F
IC25	8-759-174-16	s	IC TC74VHC244F
IC26	8-759-186-39	s	IC TC74VHC74F
IC27	8-759-081-42	s	IC TC74VHC00F
IC28	8-759-186-39	s	IC TC74VHC74F

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Ref. No. or Q'ty	Part No.	SP	Description
IC29	8-759-186-39	s	IC TC74VHC74F
IC32	8-759-186-51	s	IC TC74VHC157FS(EL) (for RSE-500/PMS-500P)
IC38	8-759-515-12	s	IC SN74ALS574BNS (for RSE-500/PMS-500P)
IC41	8-759-186-39	s	IC TC74VHC74F
IC42	8-759-037-79	s	IC MC74HC163AF (for RSE-500/PMS-500P)
IC43-45	8-759-515-12	s	IC SN74ALS574BNS (for RSE-500/PMS-500P)
IC46	8-752-871-61	s	IC CXP5068H-245Q
IC47	8-752-375-87	s	IC CXD1910Q
IC48	8-759-233-73	s	IC TC74HCT244AF(EL)
IC50	8-759-186-39	s	IC TC74VHC74F (for RSE-500/PMS-500P)
IC51	8-759-186-26	s	IC TC74VHC02F
IC52	8-759-989-91	s	IC TL7705ACPS
IC53	8-759-251-38	s	IC MB90076BPF-G-BND
IC54	8-759-494-38	o	IC CY27C256-120JC-MON01V02
IC55	8-759-701-87	s	IC NJM7909FA
IC56	8-759-069-28	s	IC PQ05RF11
IC57	8-759-701-59	s	IC NJM78M09FA
IC58	8-759-186-38	s	IC TC74VHC32F (for RSE-500/PMS-500P)
IC59	8-759-925-80	s	IC SN74HC14ANS
IC300	8-759-925-90	s	IC SN74HC74ANS
IC301	8-759-510-71	s	IC UPC358G2-E2
IC302	8-759-447-90	s	IC TLC5733AIPM
IC616	8-759-374-17	s	IC UPD65646GJ-171-3EB
IC617	8-759-294-63	s	IC M628128-20E1
IC617	8-759-436-44	s	IC IDT71024S20Y-TL
IC617	8-759-443-50	s	IC N341024SJ-20-TEL
IC618	8-759-294-63	s	IC M628128-20E1
IC618	8-759-436-44	s	IC IDT71024S20Y-TL
IC618	8-759-443-50	s	IC N341024SJ-20-TEL
IC619	8-759-294-63	s	IC M628128-20E1
IC619	8-759-436-44	s	IC IDT71024S20Y-TL
IC619	8-759-443-50	s	IC N341024SJ-20-TEL
IC620	8-759-294-63	s	IC M628128-20E1
IC620	8-759-436-44	s	IC IDT71024S20Y-TL
IC620	8-759-443-50	s	IC N341024SJ-20-TEL
IC622	8-759-361-38	s	IC UPD424260G5-70-7JF (for PMS-500P/400P)
IC622	8-759-396-62	s	IC HM51S4260CLTT-7 (for RSE-500/400)
IC623	8-759-361-38	s	IC UPD424260G5-70-7JF (for PMS-500P/400P)
IC623	8-759-396-62	s	IC HM51S4260CLTT-7 (for RSE-500/400)
IC624	8-759-361-37	s	IC UPD4218160G5-60-7JF (for RSE-500/400)
IC624	8-759-477-34	s	IC KM416C1200BT-6T
IC625	8-759-361-37	s	IC UPD4218160G5-60-7JF (for RSE-500/400)

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Ref. No. or Q'ty	Part No.	SP	Description
IC625	8-759-477-34	s	IC KM416C1200BT-6T
IC626	8-759-468-11	s	IC IIT3103AKAB
IC637	8-759-925-90	s	IC SN74HC74ANS
IC638	8-759-186-57	s	IC TC74VHC175F
IC639	8-759-174-16	s	IC TC74VHC244F
IC642	8-759-099-38	s	IC SN74HCT374ANS-E05
IC643	8-759-099-38	s	IC SN74HCT374ANS-E05
IC644	8-759-374-19	s	IC UPD17216GT-560
IC645	8-759-925-74	s	IC SN74HC04ANS
IC646	8-759-927-46	s	IC SN74HC00ANS
IC702	8-759-925-80	s	IC SN74HC14ANS
IC703	8-759-396-70	s	IC HD81504RFE
IC704	8-759-925-76	s	IC SN74HC08NS
IC705	8-759-361-90	s	IC CY6264-70SC-T2
IC706	8-759-531-47	o	IC CY27C256-120JC-BRIV1
IC707	8-759-925-85	s	IC SN74HC32ANS
IC708	8-759-186-53	s	IC TC74VHC163F
IC903	8-759-989-91	s	IC TL7705ACPS
IC904	8-759-925-90	s	IC SN74HC74ANS
IC905	8-759-151-34	s	IC UPD70216L-10
IC906	8-759-988-27	s	IC SN75188NS
IC908	8-759-186-79	s	IC TC74VHC573F
IC909	8-759-186-79	s	IC TC74VHC573F
IC910	8-759-186-79	s	IC TC74VHC573F
IC912	8-759-272-21	s	IC TC74VHCT541F
IC913	8-759-186-02	s	IC TC74VHCT245F(EL)
IC914	8-759-186-02	s	IC TC74VHCT245F(EL)
IC915	8-759-385-38	o	IC PLSI2032-80LJ44-MON04V01
IC917	8-759-384-65	s	IC MBM29F400TA-12PFTN
IC919	8-759-185-80	s	IC TC74VHCT138F(EL)
IC920	8-759-497-04	s	IC LC361000AMLL-70-TLA
IC921	8-759-497-04	s	IC LC361000AMLL-70-TLA
IC922	8-759-978-04	s	IC RF5C15
IC923	8-759-175-27	s	IC TC74VHC574F
IC924	8-759-272-21	s	IC TC74VHCT541F
IC925	8-759-272-21	s	IC TC74VHCT541F
IC926	8-759-925-80	s	IC SN74HC14ANS
IC927	8-759-925-90	s	IC SN74HC74ANS
IC928	8-759-186-49	s	IC TC74VHC139F
IC934	8-759-988-66	s	IC MB89371APF
IC936	8-759-148-14	s	IC UPD71055GB-3B4
IC937	8-759-385-40	o	IC GAL16V8B-25QJ-MON03V01
IC938	8-759-926-25	s	IC SN74HC165NS
IC939	8-759-272-21	s	IC TC74VHCT541F
IC940	8-759-054-56	s	IC SN75179BPS
IC941	8-759-988-27	s	IC SN75188NS
IC942	8-759-939-25	s	IC SN75176BP
IC943	8-759-092-82	s	IC SN75157PS-ELL2000
IC944	8-759-988-24	s	IC SN75189ANS
IC946	8-759-186-02	s	IC TC74VHCT245F(EL)
IC947	8-759-186-02	s	IC TC74VHCT245F(EL)
IC948	8-759-272-21	s	IC TC74VHCT541F
IC949	8-759-272-21	s	IC TC74VHCT541F
IC950	8-759-272-21	s	IC TC74VHCT541F
IC951	8-759-272-21	s	IC TC74VHCT541F
IC953	8-759-186-02	s	IC TC74VHCT245F(EL)
IC954	8-759-988-24	s	IC SN75189ANS
IC955	8-759-186-38	s	IC TC74VHC32F
IC956	8-759-186-38	s	IC TC74VHC32F

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Ref. No. or Q'ty	Part No.	SP	Description
IC957	8-759-385-41	o	IC GAL16V8B-25QJ-MON02V01
IC958	8-759-185-84	s	IC TC74VHC161F(EL)
IC959	8-759-186-84	s	IC TC74VHC86F
JC3	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
JC4	1-216-295-91	s	METAL, CHIP 0 5% 1/10W (for RSE-500/400)
JC5	1-216-295-91	s	METAL, CHIP 0 5% 1/10W (for PMS-500P/400P)
JC201	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
JC401	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
JC402	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
JC403	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
JC404	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
JC405	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
JC603	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
JC901	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
L1	1-408-785-21	s	INDUCTOR CHIP 47uH
L2	1-408-777-00	s	INDUCTOR CHIP 10uH
L3	1-408-785-21	s	INDUCTOR CHIP 47uH
L4	1-408-785-21	s	INDUCTOR CHIP 47uH
L9	1-408-785-21	s	INDUCTOR CHIP 47uH
L10	1-408-777-00	s	INDUCTOR CHIP 10uH
L11	1-408-785-21	s	INDUCTOR CHIP 47uH
L12	1-408-785-21	s	INDUCTOR CHIP 47uH
L13	1-408-773-31	s	INDUCTOR CHIP 4.7uH
L14	1-408-785-21	s	INDUCTOR CHIP 47uH
L16	1-408-789-21	s	INDUCTOR CHIP 100uH
L17	1-408-789-21	s	INDUCTOR CHIP 100uH
L18	1-408-781-00	s	INDUCTOR CHIP 22uH
L19	1-408-774-11	s	INDUCTOR CHIP 5.6uH (for RSE-500/400)
L300	1-408-777-00	s	INDUCTOR CHIP 10uH
L301	1-408-777-00	s	INDUCTOR CHIP 10uH
LF701 ⚠	1-239-773-11	s	FILTER, EMI CHOKE
Q1-3	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q12	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q13	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q16	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q17	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q20	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q21	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q23	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q26	8-729-216-22	s	TRANSISTOR 2SA1162 (for RSE-500/PMS-500P)
Q27	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q28	8-729-216-22	s	TRANSISTOR 2SA1162
Q29	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q300	8-729-216-22	s	TRANSISTOR 2SA1162
Q301	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q302	8-729-216-22	s	TRANSISTOR 2SA1162
Q303	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q304	8-729-216-22	s	TRANSISTOR 2SA1162
Q305	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q306	8-729-216-22	s	TRANSISTOR 2SA1162
Q307	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q308	8-729-216-22	s	TRANSISTOR 2SA1162

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Ref. No. or Q'ty	Part No.	SP	Description
Q309	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q310	8-729-216-22	s	TRANSISTOR 2SA1162
Q311	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q312	8-729-216-22	s	TRANSISTOR 2SA1162
Q313	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q314	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q600	8-729-900-53	s	TRANSISTOR DTC114EK
Q902	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
R1	1-216-047-91	s	METAL, CHIP 820 5% 1/10W
R2-4	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R5	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R6	1-216-017-91	s	METAL, CHIP 47 5% 1/10W
R7	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R8	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R9-11	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R24	1-220-356-11	s	METAL, CHIP 10M 5% 1/4W
R25	1-220-356-11	s	METAL, CHIP 10M 5% 1/4W
R26	1-208-830-11	s	METAL, CHIP 100K 0.50% 1/10W
R27	1-208-806-11	s	METAL, CHIP 10K 0.50% 1/10W
R28	1-216-089-91	s	METAL, CHIP 47K 5% 1/10W
R29	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R30	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R31	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R32	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R33	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R34-37	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R38	1-208-818-11	s	METAL, CHIP 33K 0.50% 1/10W
R39	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R40	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R41	1-208-826-11	s	METAL, CHIP 68K 0.50% 1/10W
R42	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R43	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R44	1-208-810-11	s	METAL, CHIP 15K 0.50% 1/10W
R45	1-208-804-11	s	METAL, CHIP 8.2K 0.50% 1/10W
R46	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R47	1-208-818-11	s	METAL, CHIP 33K 0.50% 1/10W
R48	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R54	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R55	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R56	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R62	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R63	1-216-043-91	s	METAL, CHIP 560 5% 1/10W
R64	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R65	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R66	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R68	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R69	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R71	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R72	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R74	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R75	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R77	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R78	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R91	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R92	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R93-100	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R101	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R102	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R103	1-208-794-11	s	METAL, CHIP 3.3K 0.50% 1/10W
R104	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R105	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R106	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R107	1-208-794-11	s	METAL, CHIP 3.3K 0.50% 1/10W
R108	1-208-802-11	s	METAL, CHIP 6.8K 0.50% 1/10W
R109	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R110	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R111	1-216-017-91	s	METAL, CHIP 47 5% 1/10W
R112	1-216-025-91	s	METAL, CHIP 100 5% 1/10W (for RSE-500/PMS-500P
R113	1-216-025-91	s	METAL, CHIP 100 5% 1/10W (for RSE-500/PMS-500P)
R114	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R115	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R116	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R117	1-216-017-91	s	METAL, CHIP 47 5% 1/10W
R118	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R119	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R120	1-216-021-00	s	METAL, CHIP 68 5% 1/10W (for RSE-500/PMS-500P)
R121	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R122	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R123	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R124	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R125	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R126	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R127	1-216-017-91	s	METAL, CHIP 47 5% 1/10W
R128	1-216-017-91	s	METAL, CHIP 47 5% 1/10W
R129	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R130	1-216-021-00	s	METAL, CHIP 68 5% 1/10W (for RSE-500/PMS-500P)
R131	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R221	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R222	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R234	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R235	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R237	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W (for RSE-500/PMS-500P)
R238	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R240	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W (for RSE-500/PMS-500P)
R241	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R242	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R243	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R244	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R253-268	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R272	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R273	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R274	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R275	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R276	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R277	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R278	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R279	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R280	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R281	1-216-021-00	s	METAL, CHIP 68 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R300	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R301	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R302	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R303	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R305	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R306-309	1-216-298-00	s	METAL, CHIP 2.2 5% 1/10W
R310	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R311	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R312	1-216-298-00	s	METAL, CHIP 2.2 5% 1/10W
R313	1-216-298-00	s	METAL, CHIP 2.2 5% 1/10W
R314	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R315	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R316	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R317-319	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R321	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R322	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R323	1-216-017-91	s	METAL, CHIP 47 5% 1/10W
R601-608	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R613	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R614	1-216-017-91	s	METAL, CHIP 47 5% 1/10W
R615	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R617	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R618	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R624	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R626	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R627	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R641-644	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R645	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R646	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R647	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R649-651	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R652	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R653	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R701	1-211-960-11	s	METAL, CHIP 24 0.50% 1/10W
R702	1-216-603-11	s	METAL, CHIP 10 0.5% 1/10W
R704	1-208-784-11	s	METAL, CHIP 1.2K 0.50% 1/10W
R705	1-208-784-11	s	METAL, CHIP 1.2K 0.50% 1/10W
R712	1-211-960-11	s	METAL, CHIP 24 0.50% 1/10W
R713	1-216-603-11	s	METAL, CHIP 10 0.5% 1/10W
R718	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R719	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R720	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R721	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R722	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R723	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R724	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R725	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R727	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
R728	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R729	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R730	1-247-847-31	s	CARBON 4.7K 5% 1/4W
R902	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R903	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R905	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R907	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R908	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R913-920	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R921	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R950	1-220-221-11	s	METAL, CHIP 100 5% 1/2W

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Ref. No. or Q'ty	Part No.	SP	Description
R951	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R952	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R953-956	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R957	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R958	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R960	1-220-221-11	s	METAL, CHIP 100 5% 1/2W
R965	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R966	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R968-971	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R974	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R975	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R976	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R977-985	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R987	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W (for RSE-500/400)
R988	1-216-295-91	s	METAL, CHIP 0 5% 1/10W (for PMS-500P/400P)
R989	1-220-221-11	s	METAL, CHIP 100 5% 1/2W
R990	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R991	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
RB2	1-239-306-11	s	RESISTOR BLOCK, CHIP 10KX8 (for RSE-500/PMS-500P)
RB3	1-239-388-91	s	RESISTOR BLOCK, CHIP 68X8
RB4	1-239-388-91	s	RESISTOR BLOCK, CHIP 68X8
RB101	1-239-304-11	s	RESISTOR BLOCK, CHIP 2.2KX8
RB102	1-239-304-11	s	RESISTOR BLOCK, CHIP 2.2KX8
RB601	1-239-621-11	s	RESISTOR BLOCK, CHIP 22X8
RB602	1-239-621-11	s	RESISTOR BLOCK, CHIP 22X8
RB603	1-239-621-11	s	RESISTOR BLOCK, CHIP 22X8
RB604	1-239-621-11	s	RESISTOR BLOCK, CHIP 22X8
RB605	1-239-388-91	s	RESISTOR BLOCK, CHIP 68X8
RB606	1-239-388-91	s	RESISTOR BLOCK, CHIP 68X8
RB607	1-239-306-11	s	RESISTOR BLOCK, CHIP 10KX8
RB608	1-239-621-11	s	RESISTOR BLOCK, CHIP 22X8
RB609	1-239-621-11	s	RESISTOR BLOCK, CHIP 22X8
RB610	1-239-621-11	s	RESISTOR BLOCK, CHIP 22X8
RB611	1-239-621-11	s	RESISTOR BLOCK, CHIP 22X8
RB612	1-236-908-11	s	RESISTOR BLOCK, CHIP 10KX4
RB701	1-239-309-11	s	RESISTOR BLOCK, CHIP 100KX8
RB702	1-236-907-11	s	RESISTOR BLOCK, CHIP 100KX4
RB703	1-239-309-11	s	RESISTOR BLOCK, CHIP 100KX8
RB704	1-239-309-11	s	RESISTOR BLOCK, CHIP 100KX8
RB705	1-239-309-11	s	RESISTOR BLOCK, CHIP 100KX8
RB902	1-239-306-11	s	RESISTOR BLOCK, CHIP 10KX8
RB903	1-239-306-11	s	RESISTOR BLOCK, CHIP 10KX8
RB904	1-239-306-11	s	RESISTOR BLOCK, CHIP 10KX8
RB905	1-239-306-11	s	RESISTOR BLOCK, CHIP 10KX8
RB906	1-239-306-11	s	RESISTOR BLOCK, CHIP 10KX8
RB907	1-239-306-11	s	RESISTOR BLOCK, CHIP 10KX8
RV1	1-238-853-11	s	RES, ADJ, METAL 1K
RV2-4	1-238-854-11	s	RES, ADJ, METAL 2.2K
RV5	1-238-853-11	s	RES, ADJ, METAL 1K (for RSE-500/PMS-500P)
S1	1-771-245-11	s	SWITCH, ROTARY
S901	1-571-787-31	s	SWITCH, PUSH
S902	1-692-271-31	s	SWITCH, SLIDE

(DPR-86 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
S903	1-692-271-31	s	SWITCH, SLIDE
S906	1-692-162-11	s	SWITCH, SLIDE
S907	1-570-134-11	s	SWITCH, SLIDE
S908	1-553-977-00	s	SWITCH, SLIDE
S909	1-570-134-11	s	SWITCH, SLIDE
T1	1-404-488-00	s	COIL, IF (for RSE-500)
T701 ⚠	1-429-630-11	s	TRANSFORMER, INPUT/OUTPUT
T702 ⚠	1-429-630-11	s	TRANSFORMER, INPUT/OUTPUT
X1	1-760-457-11	s	CRYSTAL 17.734475MHz (for PMS-500P/400P)
X2	1-527-722-00	s	CRYSTAL 14.31818MHZ (for RSE-500/400)
X3	1-567-160-21	s	RESONATOR, CERAMIC 4.19MHz
X4	1-760-275-11	s	CRYSTAL 27MHz
X5	1-527-722-00	s	CRYSTAL 14.31818MHZ
X601	1-760-557-11	o	CRYSTAL 12.288MHz
X602	1-767-548-21	s	OSCILLATOR, CRYSTAL
X603	1-579-477-21	s	VIBRATOR, CRYSTAL 4MHz
X901	1-760-040-11	s	CRYSTAL 19.6608MHz
X902	1-760-928-21	s	CRYSTAL 0.032768MHz

IF-588A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8316-293-A	o	MOUNTED CIRCUIT BOARD, IF-588AH
1pc	1-562-737-11	o	HOUSING, 4P
1pc	1-564-831-11	o	CONTACT, FEMALE
1pc	1-569-193-11	s	CONTACT, AWG24-30
1pc	1-569-197-11	o	PLUG HOUSING, 4P
C1	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C2	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C3	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C4	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C5	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C11-13	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C18-23	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C24	1-126-399-11	s	ELECT, CHIP 10uF 20% 35V
C25	1-126-399-11	s	ELECT, CHIP 10uF 20% 35V
C26-60	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C61	1-128-257-21	s	ELECT 33uF 20% 10V
C62	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C63	1-126-395-11	s	ELECT, CHIP 22uF 20% 16V
C64	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C65	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C66-69	1-126-401-11	s	ELECT, CHIP 1uF 20% 50V
C70	1-128-257-21	s	ELECT 33uF 20% 10V
C71-74	1-126-401-11	s	ELECT, CHIP 1uF 20% 50V
C75-87	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C885	1-126-401-11	s	ELECT, CHIP 1uF 20% 50V
C886	1-126-401-11	s	ELECT, CHIP 1uF 20% 50V
C887-897	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C900-915	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
CN201	1-569-019-11	s	CONNECTOR,TX(P.L)(PC BOARD)60P
CN202	1-565-078-11	o	CONNECTOR, 40P, MALE
CN203	1-580-194-21	o	CONNECTOR, PC BOARD 100P
IC1	8-759-701-75	s	IC NJM7805FA
IC2	8-759-701-84	s	IC NJM7905FA
IC3	8-759-148-14	s	IC UPD71055GB-3B4
IC4	8-759-534-19	s	IC TD62597AF(EL)
IC5	8-759-186-38	s	IC TC74VHC32F
IC6	8-759-186-47	s	IC TC74VHC138F
IC7	8-759-186-66	s	IC TC74VHC273F
IC8	8-759-148-14	s	IC UPD71055GB-3B4
IC9	8-759-186-30	s	IC TC74VHC14F
IC10	8-759-272-21	s	IC TC74VHCT541F
IC11	8-759-242-15	s	IC TC74HC4078AF
IC12	8-759-534-19	s	IC TD62597AF(EL)
IC13	8-759-186-30	s	IC TC74VHC14F
IC14	8-759-534-19	s	IC TD62597AF(EL)
IC15-18	8-759-534-19	s	IC TD62597AF(EL)
IC19	8-759-242-15	s	IC TC74HC4078AF
IC20	8-759-185-80	s	IC TC74VHCT138F(EL)
IC21	8-759-262-00	s	IC MC14576CF
IC22	8-759-186-30	s	IC TC74VHC14F
IC811	8-759-926-67	s	IC SN74HC374ANS
IC816	8-759-926-48	s	IC SN74HC244ANS
IC821	8-759-926-67	s	IC SN74HC374ANS
IC826	8-759-926-48	s	IC SN74HC244ANS
IC831	8-759-926-12	s	IC SN74HC139ANS
IC832	8-759-926-12	s	IC SN74HC139ANS
IC833	8-759-925-74	s	IC SN74HC04ANS
IC834	8-759-926-48	s	IC SN74HC244ANS

(IF-588A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC835	8-759-186-30	s	IC TC74VHC14F
IC836	8-759-925-85	s	IC SN74HC32ANS
IC837	8-759-925-90	s	IC SN74HC74ANS
IC838	8-759-186-30	s	IC TC74VHC14F
IC840	8-759-925-90	s	IC SN74HC74ANS
IC841	8-759-926-12	s	IC SN74HC139ANS
IC842	8-759-925-85	s	IC SN74HC32ANS
IC843	8-759-925-85	s	IC SN74HC32ANS
IC844	8-759-988-24	s	IC SN75189ANS
IC845	8-759-988-27	s	IC SN75188NS
IC846	8-759-988-27	s	IC SN75188NS
IC847	8-759-988-24	s	IC SN75189ANS
IC848	8-759-988-24	s	IC SN75189ANS
IC849	8-759-988-27	s	IC SN75188NS
IC850	8-759-988-27	s	IC SN75188NS
IC851	8-759-483-63	s	IC XR-T3590ID
IC852	8-759-483-63	s	IC XR-T3590ID
IC853	8-759-233-73	s	IC TC74HCT244AF(EL)
JC1	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
L1	1-412-529-11	s	INDUCTOR 22uH
L2	1-412-529-11	s	INDUCTOR 22uH
L3	1-408-785-21	s	INDUCTOR CHIP 47uH
Q1-3	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q4-11	8-729-216-22	s	TRANSISTOR 2SA1162
Q12	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q13-16	8-729-216-22	s	TRANSISTOR 2SA1162
Q17-20	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q21	8-729-216-22	s	TRANSISTOR 2SA1162
Q22	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q23	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q24	8-729-216-22	s	TRANSISTOR 2SA1162
Q25	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q26	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q27	8-729-216-22	s	TRANSISTOR 2SA1162
Q28	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q29	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q30	8-729-216-22	s	TRANSISTOR 2SA1162
Q31	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q32	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q33	8-729-216-22	s	TRANSISTOR 2SA1162
Q34	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q35	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q36	8-729-216-22	s	TRANSISTOR 2SA1162
Q37	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q38	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q39	8-729-216-22	s	TRANSISTOR 2SA1162
Q40	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q41	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q42	8-729-216-22	s	TRANSISTOR 2SA1162
R1	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R2	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R3	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R4	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R6	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R8	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R10	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R12	1-216-025-91	s	METAL, CHIP 100 5% 1/10W

(IF-588A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R14	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R16	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R18	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R20	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R22	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R24-26	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R27	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R28	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R29	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R30	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R31	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R32	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R33	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R34	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R35	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R36	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R37	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R38	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R39	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R40	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R41	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R42	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R43	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R44	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R45	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R46	1-216-025-91	s	METAL, CHIP 100 5% 1/10W
R47-50	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
R51-53	1-216-295-91	s	METAL, CHIP 0 5% 1/10W
R56	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R57	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R58	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R59	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R60-83	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R84	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R85	1-220-256-11	s	METAL, CHIP 75 5% 1/4W
R86	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R87-94	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R95	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R96	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R97	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R98	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R99	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R100	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R101	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R102	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R103	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R104	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R105	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R106	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R107	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R108	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R109	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R110	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R111	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R112	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R113	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R114	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R115	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W
R116	1-216-049-91	s	METAL, CHIP 1K 5% 1/10W

(IF-588A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R117	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R118	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R891	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R892	1-216-101-00	s	METAL, CHIP 150K 5% 1/10W
R893-896	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R894-896	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R897-900	1-216-065-91	s	RESCHIP 4.7K 5% 1/10W
RB1-10	1-239-306-11	s	RESISTOR BLOCK, CHIP 10KX8
RB12	1-239-306-11	s	RESISTOR BLOCK, CHIP 10KX8
S1	1-571-967-11	s	SWITCH, DIP 8-CKT
S2	1-571-967-11	s	SWITCH, DIP 8-CKT
S3	1-553-572-00	s	SWITCH, DIP 4-CKT

KY-358 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8273-200-A	o	MOUNTED CIRCUIT BOARD, KY-358
1pc	1-569-193-11	o	CONTACT, AWG24-30
1pc	1-569-195-11	o	HOUSING, CONNECTOR 2P
1pc	1-620-916-11	o	PRINTED CIRCUIT BOARD, PE-18
1pc	8-719-918-87	s	DIODE GL8KG21T
BZ1	1-529-025-00	s	BUZZER
C1	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C3	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C4	1-126-394-11	s	ELECT, CHIP 10uF 20% 16V
C5	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C6	1-163-259-91	s	CERAMIC 220PF 5% 50V
C7	1-163-259-91	s	CERAMIC 220PF 5% 50V
C8	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C9	1-126-401-11	s	ELECT, CHIP 1uF 20% 50V
C12	1-126-401-11	s	ELECT, CHIP 1uF 20% 50V
C13	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C21-28	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
C31-33	1-163-038-91	s	CERAMIC, CHIP 0.1uF 25V
CN1	1-506-489-11	s	CONNECTOR, 10P, MALE
CN2	1-506-481-11	s	CONNECTOR, 2P, MALE
D2	8-719-918-96	s	DIODE TLO123
D3	8-719-920-05	s	SLP281C-50
D4	8-719-801-78	s	DIODE 1SS184
IC1	8-759-115-55	s	IC UPC1555C
IC2	8-759-200-73	s	IC TC4020BF
IC3	8-759-293-00	s	IC TC74HC107AF(TP1)
IC4	8-759-268-95	s	IC SN74HCT00ANS-E05
IC5	8-759-269-12	s	IC SN74HCT08ANS
IC6	8-759-099-37	s	IC SN74HCT74ANS-E05
IC7	8-759-925-80	s	IC SN74HC14ANS
IC8	8-759-444-74	s	IC UPD6124AGS-F46
IC10	8-742-088-10	s	HYB IC SBX1780-51(10)
IC12	8-759-239-55	s	IC TC74HC123AF
IC13	8-759-099-39	s	IC SN74HCT32ANS-E05
Q1-6	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
R3	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R4	1-216-063-91	s	METAL, CHIP 3.9K 5% 1/10W
R5	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R6	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R8	1-216-017-91	s	METAL, CHIP 47 5% 1/10W
R9	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R10	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R11	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R12	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R13	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R14	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R17	1-216-097-91	s	METAL, CHIP 100K 5% 1/10W
R18-20	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
S1-5	1-571-787-31	s	SWITCH, PUSH
X1	1-577-511-11	s	RESONATOR, CERAMIC 480KHz

PE-18 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-620-916-11	o	PRINTED CIRCUIT BOARD, PE-18
1pc	1-569-193-11	o	CONTACT, AWG24-30
CN206	1-569-195-11	o	HOUSING, CONNECTOR 2P
D1	8-719-918-87	s	DIODE GL8KG21T

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠ 1-251-384-11	s	INLET (WITH NOISE FILTER)
1pc	⚠ 1-468-109-11	s	REGULATOR, SWITCHING (for RSE-500/400)
1pc	⚠ 1-468-160-11	s	REGULATOR, SWITCHING (for PMS-500P/400P)
1pc	⚠ 1-532-745-11		Fuse (3 A, 125 V) (for RSE-500/400)
1pc	⚠ 1-576-228-31		Fuse (T2 A, H250 V) (for PMS-500P/400P)
1pc	1-951-975-11	o	HARNESS (60 CORE)

HARNESS (AUDIO): CN502/APR-24 to CN301/CN-1308

Ref. No. or Q'ty	Part No.	SP	Description
CN502	1-569-205-11	o	PLUG HOUSING, 12P
1pc	1-569-191-11	o	CONTACT, AWG22-26
10pcs	1-569-193-11	o	CONTACT, AWG24-30
CN301	1-569-205-11	o	PLUG HOUSING, 12P
1pc	1-569-191-11	o	CONTACT, AWG22-26
10pcs	1-569-193-11	o	CONTACT, AWG24-30

HARNESS(LED): CN2/KY-358 to CN206/PE-18

Ref. No. or Q'ty	Part No.	SP	Description
CN2	1-569-196-11	o	HOUSING, CONNECTOR 2P
2pcs	1-569-193-11	o	CONTACT, AWG24-30

HARNESS(KY): CN1/KY-358 to CN104/DPR-86

Ref. No. or Q'ty	Part No.	SP	Description
CN1	1-569-203-11	o	HOUSING, CONNECTOR 10P
10pcs	1-569-193-11	o	CONTACT, AWG24-30
CN104	1-569-203-11	o	HOUSING, CONNECTOR 10P
10pcs	1-569-193-11	o	CONTACT, AWG24-30
FB102	1-543-998-11	s	CORE, TROIDAL

HARNESS(VIDEO): CN105/DPR-86 to CN205/IF-588

Ref. No. or Q'ty	Part No.	SP	Description
CN105	1-569-197-11	o	HOUSING CONNECTOR 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN205	1-562-737-11	o	HOUSING CONNECTOR 4P
4pcs	1-564-831-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(POWER):

(CN1/POWER SUPPLY to POWER SW)

Ref. No. or Q'ty	Part No.	SP	Description
2pc	1-562-210-11	o	CONTACT, FEMALE AWG18-22
1pc	⚠ 1-762-896-11	s	SWITCH, POWER
CN1	1-562-211-11	o	HOUSING, VH, 3P

(AC INLET to GROUND)

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠ 1-251-384-11	s	INLET (WITH NOISE FILTER)
1pc	1-535-321-11	o	TERMINAL, SOLDERLESS
1pc	1-537-568-11	o	TERMINAL, SOLDERLESS
1pc	4-605-511-02	o	COVER, INLE, 3P

8-4. SUPPLIED ACCESSORIES

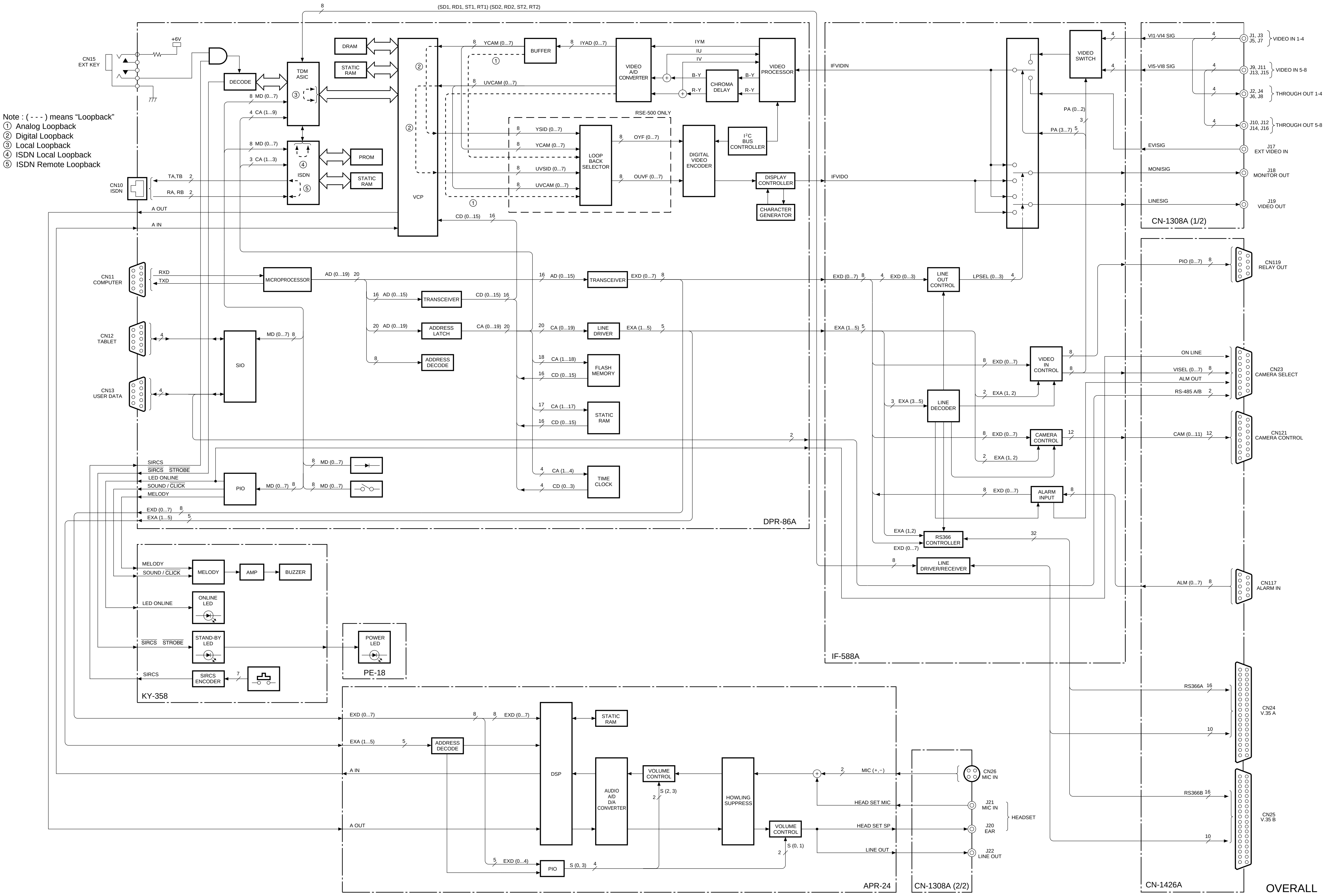
Ref. No. or Q'ty	Part No.	SP	Description
(for PMS-500P/400P)			
1pc	⚠ 1-782-929-11	s	CORD, POWER SUPPLY (BS 3P)
1pc	3-810-719-11	s	MANUAL, INSTRUCTION
1pc	3-810-720-21	o	SHEET, TABLET EXPLANATION
(for RSE-500/400)			
1pc	1-475-769-11	s	REMOTE COMMANDER (for RSE-500 only)
1pc	⚠ 1-551-812-11	s	CORD, POWER
1pc	3-810-720-21	o	SHEET, TABLET EXPLANATION
1pc	3-862-036-12	s	MANUAL, INSTRUCTION

8-5. OPTIONAL FIXTURES

Ref. No. or Q'ty	Part No.	SP	Description
(for PMS-500P/400P)			
1pc	J-6431-030-A	o	ROM tool Board, Disk and Download ROM
1pc	J-6389-560-A	o	Cable Kit
1pc	J-6431-040-A	o	Download ROM
1pc	J-6431-050-A	o	Factory Set Program
(for RSE-500/400)			
1pc	J-6431-740-A	o	ROM tool Board, Disk and Download ROM
1pc	J-6389-560-A	o	Cable Kit
1pc	J-6431-720-A	o	Download ROM

SECTION 9
OPERATING DESCRIPTION AND BLOCK DIAGRAMS

OVERALL


Note : (- - -) means "Loopback"
① Analog Loopback
② Digital Loopback
③ Local Loopback
④ ISDN Local Loopback
⑤ ISDN Remote Loopback

(SD1, RD1, ST1, RT1) (SD2, RD2, ST2, RT2)
+6V
CN15
EXT KEY
DECODE
TDM
ASIC
DRAM
STATIC
RAM
VCP
MD (0...7)
CA (1...9)
MD (0...7)
CA (1...3)
ISDN
PROM
STATIC
RAM
CN10
ISDN
TA,TB
RA, RB
A OUT
A IN
YCAM (0...7)
BUFFER
IYAD (0...7)
UVCAM (0...7)
VIDEO
A/D
CONVERTER
IYM
IU
IV
B-Y
R-Y
CHROMA
DELAY
VIDEO
PROCESSOR
RSE-500 ONLY
YSID (0...7)
YCAM (0...7)
UVSID (0...7)
UVCAM (0...7)
LOOP
BACK
SELECTOR
OYF (0...7)
OUVF (0...7)
DIGITAL
VIDEO
ENCODER
I²C
BUS
CONTROLLER
DISPLAY
CONTROLLER
CHARACTER
GENERATOR
CD (0...15)
CN11
COMPUTER
RXD
TXD
MICROPROCESSOR
AD (0...19)
AD (0...15)
TRANSCEIVER
CD (0...15)
AD (0...19)
ADDRESS
LATCH
CA (0...19)
ADDRESS
DECODE
AD (0...15)
TRANSCEIVER
EXD (0...7)
CA (0...19)
LINE
DRIVER
EXA (1...5)
CA (1...18)
CD (0...15)
FLASH
MEMORY
CA (1...17)
CD (0...15)
STATIC
RAM
CA (1...4)
CD (0...3)
TIME
CLOCK
CN12
TABLET
CN13
USER DATA
SIO
MD (0...7)
SIRCS
SIRCS STROBE
LED ONLINE
SOUND / CLICK
MELODY
PIO
MD (0...7)
MD (0...7)
MD (0...7)
EXD (0...7)
EXA (1...5)
DPR-86A
MELODY
SOUND / CLICK
MELODY
AMP
BUZZER
LED ONLINE
ONLINE
LED
SIRCS STROBE
STAND-BY
LED
SIRCS
SIRCS
ENCODER
KY-358
POWER
LED
PE-18
EXD (0...7)
EXD (0...7)
EXA (1...5)
ADDRESS
DECODE
A IN
DSP
STATIC
RAM
AUDIO
A/D
D/A
CONVERTER
VOLUME
CONTROL
S (2, 3)
HOWLING
SUPPRESS
MIC (+,−)
HEAD SET MIC
HEAD SET SP
LINE OUT
A OUT
VOLUME
CONTROL
S (0, 1)
EXD (0...4)
PIO
S (0, 3)
APR-24
CN26
MIC IN
J21
MIC IN
J20
EAR
J22
LINE OUT
HEADSET
CN-1308A (2/2)
IFVIDIN
IFVIDO
VIDEO
SWITCH
PA (0...2)
PA (3...7)
VI1-VI4 SIG
VI5-VI8 SIG
EVISIG
MONISIG
LINESIG
J1, J3
J5, J7
VIDEO IN 1-4
J9, J11
J13, J15
VIDEO IN 5-8
J2, J4
J6, J8
THROUGH OUT 1-4
J10, J12
J14, J16
THROUGH OUT 5-8
J17
EXT VIDEO IN
J18
MONITOR OUT
J19
VIDEO OUT
CN-1308A (1/2)
EXD (0...7)
EXD (0...3)
LINE
OUT
CONTROL
LPSEL (0...3)
EXA (1...5)
EXD (0...7)
VIDEO
IN
CONTROL
EXA (1, 2)
EXA (3...5)
LINE
DECODER
EXD (0...7)
CAMERA
CONTROL
EXA (1, 2)
EXD (0...7)
ALARM
INPUT
EXA (1,2)
RS366
CONTROLLER
EXD (0...7)
LINE
DRIVER/RECEIVER
IF-588A
PIO (0...7)
CN119
RELAY OUT
ON LINE
VISEL (0...7)
ALM OUT
RS-485 A/B
CN23
CAMERA SELECT
CAM (0...11)
CN121
CAMERA CONTROL
ALM (0...7)
CN117
ALARM IN
RS366A
CN24
V.35 A
RS366B
CN25
V.35 B
CN-1426A

DESCRIPTION

The PMS-500P/400P or RSE-500/400 is a video codec (including an audio signal) used for remote monitoring. This convenient communication device can be directly connected to the telephone line of an ISDN.

The PMS-500P or RSE-500 can send and receive both video and audio signals on the assumption that it is mainly used on the center side (monitoring side). The PMS-400P or RSE-400 can send only a video signal and send and receive an audio signal on the assumption that it is mainly used on the terminal side (monitored side).

CONFIGURATION

[DPR-86A board]

This main board mounts a video compressor/decompressor, ISDN line interface, video processor, and CPU. There are some signals that can be both sent and received and only sent according to the model used. Each circuit differs corresponding to these signals.

[IF-588A board]

This board controls the input and output of an external connector. This board mounts CAMERA CONTROL, RELAY OUT, and ALARM IN parallel interfaces, a multi-input video signal selection circuit, and a video output selection circuit. The number of input and output connectors varies depending on the model used. Each circuit differs corresponding to the number of connectors.

[APR-24 board]

This board has audio input/output circuit, howling suppression audio switch, and audio compression/decompression functions.

[CN-1308A board]

This board mounts VIDEO IN, THROUGH OUT, EXT VIDEO IN, MONITOR OUT, VIDEO OUT, HEAD SET, MIC IN, and LINE OUT connectors. The PMS-400P or RSE-400 does not mount the VIDEO OUT connector.

[CN-1426A board]

This board mounts ALARM IN, RELAY OUT, CAMERA CONTROL, and CAMERA SELECT connectors.

[KY-358 board]

This board mounts front operation keys, an SIRCS photosensor, and a RINGER.

[Others]

The power supply board and LED board are also provided.

9-1. DPR-86A BOARD

This board treats almost all processing functions of the PMS-500P/400P or RSE-500/400. This board consists of five functional blocks, that is, a V50 CPU block, video codec block, ISDN interface block, video A/D converter block, and video D/A converter block.

A composite video signal is input to the A/D converter and converted into Y and color-difference signals using a decoder. The signal is then converted from analog to digital and sent to the video codec. In this video codec, the video data is compressed according to H.261 and coded in the H.221 procedure. This data is sent from an ISDN interface to a line. Receive data is also sent from the interface to the video codec and decoded in the reverse procedure. The resultant data is returned to an analog signal using a video D/A converter, converted into a composite signal using an encoder, then output.

[Description of the connectors between boards]

CN101 (10-pin)

Voltages of +5 V, +6 V, +12 V, and -12 V are supplied from the power block.

This connector sends a power control signal to the power block and turns off the power except +5 V during standby. The power is turned on when this signal (at pin 6) is set low.

CN102 (60-pin)

This connector is mainly connected to the IF-588A board via an address bus and data bus.

CN103 (100-pin)

This connector is connected to the APR-24 board. The connector exchanges the compressed audio data. It also contains the address bus and data bus required to download the necessary program in a V50 CPU from PROM.

CN104 (10-pin)

This connector is connected to the KY-358 board. The connector receives an SIRCS signal and sends a control signal to the LED and RINGER.

CN105 (4-pin)

This connector is connected to the IF-588A board. The connector exchanges a composite video signal.

[V50 CPU block]

This block downloads software to a man-machine interface and VCP (video codec chip) for activation, controls each I/O, and controls outgoing and incoming calls. A control PIO (IC936) in the peripheral circuit, an external computer, and an SIO (IC934) that communicates with a tablet are provided, with V50 (IC905) operated by a crystal oscillator of 19.6608 MHz, 4 Mbit flush memory (IC917) in which a program is downloaded, and 256-kbyte SRAM (IC920 and IC921) in the center. PLSI2032 (IC915) is used for address decoding and bus signal generation. The following are obtained as an external interrupt. A man-machine interface (MMI) is not used in this case.

IRQ0 : Sets the output of timer counter TCT#0 incorporated into V50. (10 msec)
IRQ1 : Sets the SCU computer port incorporated into V50 to the send/receive ready state.
IRQ2 : Sets the SIO (IC934) tablet port to the send/receive ready state.
IRQ3 : Sets the SIO (IC934) user data port to the send/receive ready state.
IRQ4 : V sync
IRQ5 : Requests the data transfer from VCP.
IRQ6 : Receives the SIRCS (keypad) data.
IRQ7 : Alarm input (contact ON) and called V35/BRI

* For IRQ7, three interrupts are input in a same level. Therefore, the type of the interrupt to be input is checked using a register.

A RESET signal is generated to monitor the supply voltage using IC903. It is also manually generated using switch SW901. VCP (video codec chip) is not only reset using this RESET signal, but also it can be controlled by the program from PIO (IC935).

Moreover, a calendar function (IC922) is provided as I/O. The power supply is backed up by a capacitor (C921) of 1 Farad. The set value can be maintained at the least for two weeks even if the power of the main unit is turned off. (Refer to the block diagram (3/4) of the DPR-86A board.)

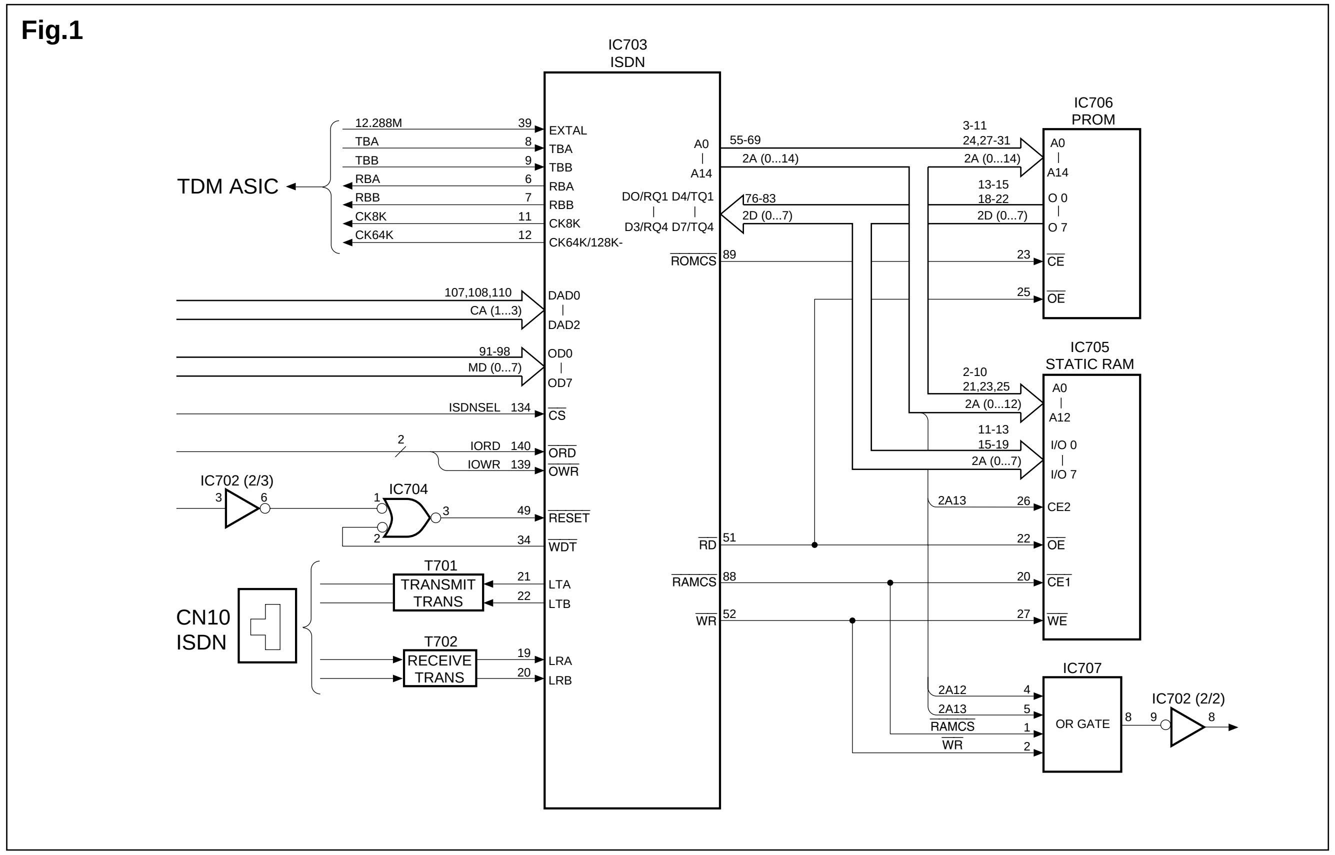
[ISDN interface block]

This interface block is classified into the primary circuit between an ISDN modular eight-pin connector (CN10) and transformer (IC701 and IC702) and the sequent secondary circuit. The whole control operation is performed by a single-chip MPU (IC703) on the secondary circuit side. The MPU consists of PROM (IC706) and 64-kbit SRAM (IC705).

The V50 CPU block performs the state setting, and outgoing and incoming operations using an I/O register.

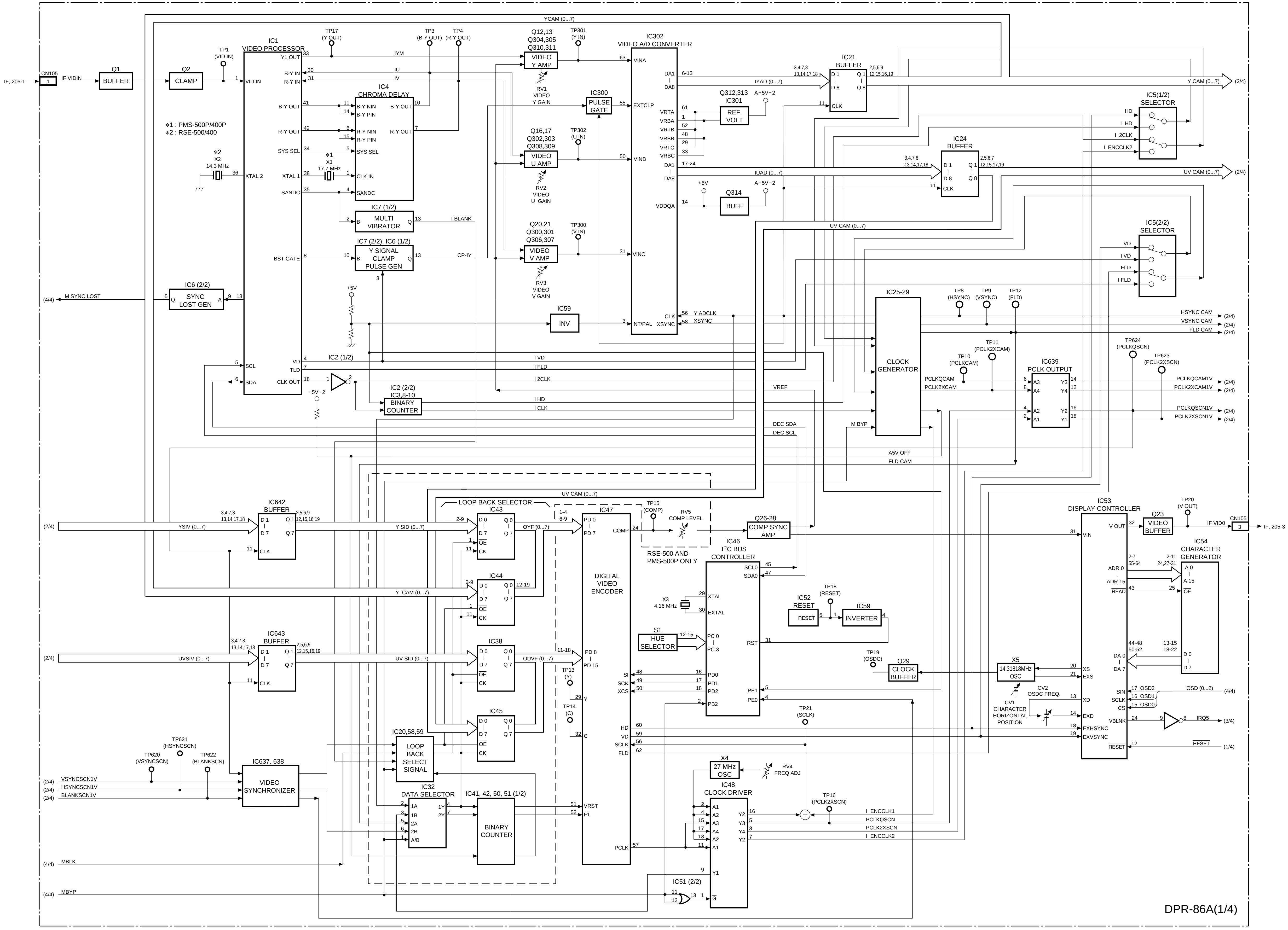
The data that is sent and received after an ISDN line is connected is TBA, TBB (send data), RBA, RBB (receive data), CK8K, and CK64K. These data are sent to TDM-ASIC (IC616). (Refer to Fig. 1)

Fig.1

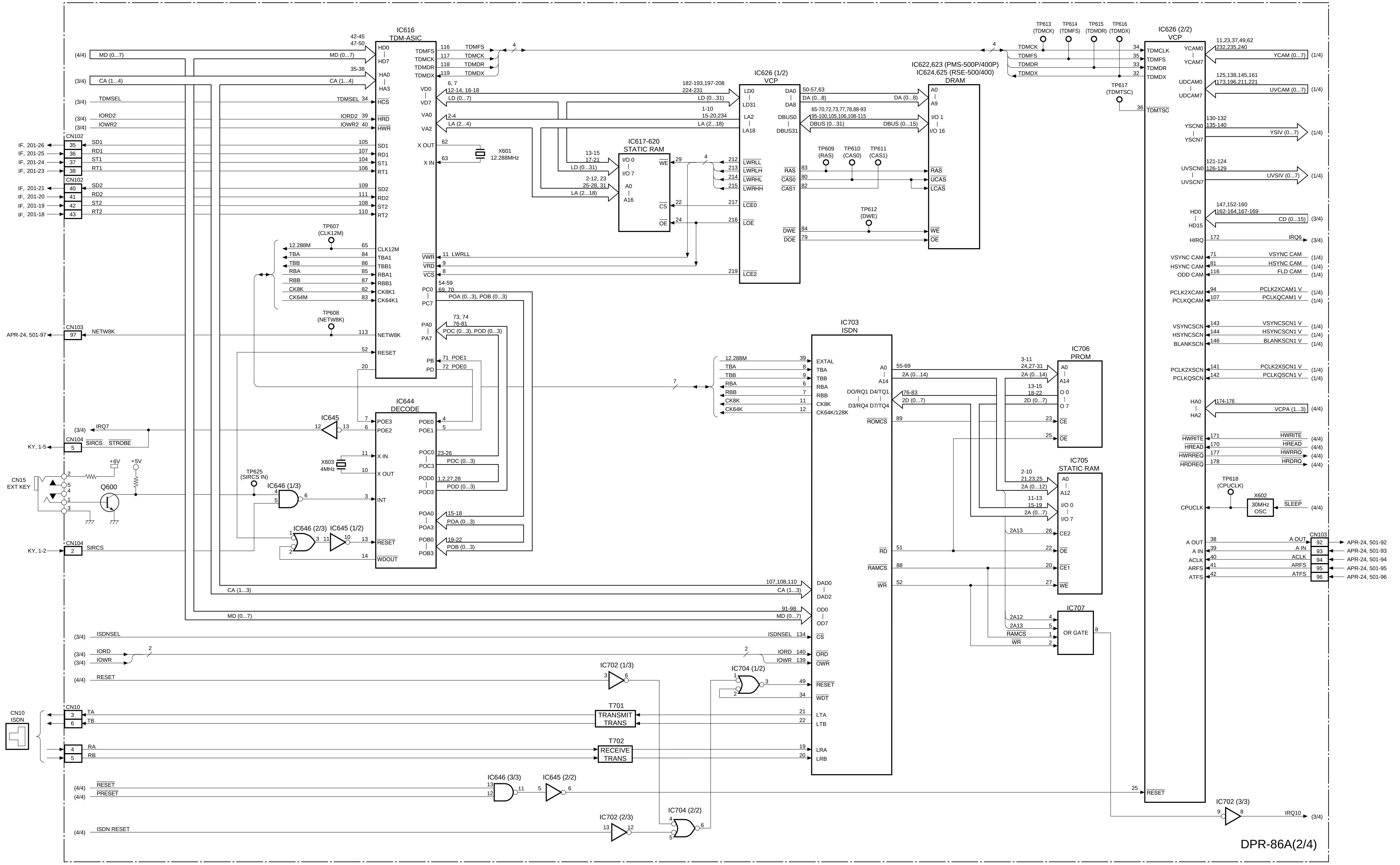

IC703
ISDN
TDM ASIC
12.288M 39 EXTAL
TBA 8 TBA
TBB 9 TBB
RBA 6 RBA
RBB 7 RBB
CK8K 11 CK8K
CK64K 12 CK64K/128K-
107,108,110 CA (1...3) DAD0 | DAD2
91-98 MD (0...7) OD0 | OD7
ISDNSEL 134 CS
2
IORD 140 ORD
IOWR 139 OWR
IC702 (2/3) 3 6
IC704 1 2 3
49 RESET
34 WDT
CN10
ISDN
T701 TRANSMIT TRANS 21 LTA 22 LTB
T702 RECEIVE TRANS 19 LRA 20 LRB
A0 | A14 55-69 2A (0...14)
DO/RQ1 D4/TQ1 | | D3/RQ4 D7/TQ4 76-83 2D (0...7)
ROMCS 89
RD 51
RAMCS 88
WR 52
IC706
PROM
3-11 24,27-31 2A (0...14) A0 | A14
13-15 18-22 2D (0...7) O 0 | O 7
23 CE
25 OE
IC705
STATIC RAM
2-10 21,23,25 2A (0...12) A0 | A12
11-13 15-19 2A (0...7) I/O 0 | I/O 7
2A13 26 CE2
22 OE
20 CE1
27 WE
IC707
2A12 4
2A13 5
RAMCS 1
WR 2
OR GATE
IC702 (2/2)
8 9 8

http://getMANUAL.com

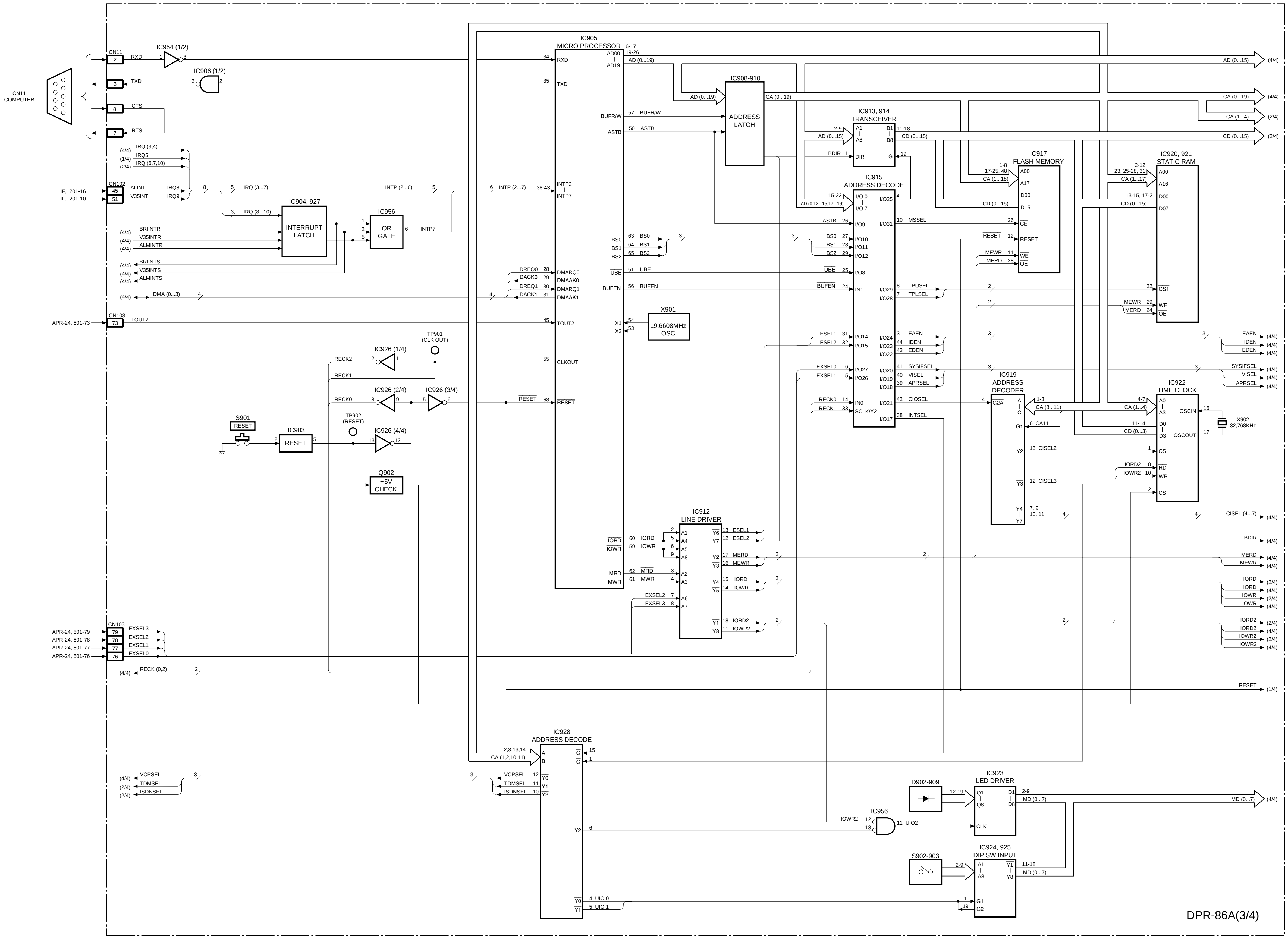
DPR-86A (1/4) ; ISDN I/F, VIDEO AD/DA VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU


IF, 205-1
CN105
IF VIDIN
Q1 BUFFER
Q2 CLAMP
TP1 (VID IN)
IC1 VIDEO PROCESSOR
VID IN
Y1 OUT
B-Y IN
R-Y IN
B-Y OUT
R-Y OUT
SYS SEL
XTAL 1
XTAL 2
SANDC
BST GATE
VD
TLD
CLK OUT
SCL
SDA
※1 : PMS-500P/400P
※2 : RSE-500/400
X2 14.3 MHz
X1 17.7 MHz
TP17 (Y OUT)
TP3 (B-Y OUT)
TP4 (R-Y OUT)
IYM
IU
IV
IC4 CHROMA DELAY
B-Y NIN
B-Y PIN
R-Y NIN
R-Y PIN
CLK IN
IC7 (1/2) MULTI VIBRATOR
I BLANK
IC7 (2/2), IC6 (1/2) Y SIGNAL CLAMP PULSE GEN
CP-IY
+5V
IC6 (2/2) SYNC LOST GEN
M SYNC LOST
(4/4)
IC2 (1/2)
+5V~2
IC2 (2/2) IC3,8-10 BINARY COUNTER
I VD
I FLD
I 2CLK
I HD
I CLK
Q12,13 Q304,305 Q310,311 VIDEO Y AMP
RV1 VIDEO Y GAIN
Q16,17 Q302,303 Q308,309 VIDEO U AMP
RV2 VIDEO U GAIN
Q20,21 Q300,301 Q306,307 VIDEO V AMP
RV3 VIDEO V GAIN
TP301 (Y IN)
TP302 (U IN)
TP300 (V IN)
IC300 PULSE GATE
IC59 INV
YCAM (0...7)
IC302 VIDEO A/D CONVERTER
VINA
EXTCLP
VINB
VINC
NT/PAL
DA1 DA8
VRTA VRBA VRTB VRBB VRTC VRBC
VDDQA
CLK
XSYNC
Y ADCLK
XSYNC
Q312,313 IC301 REF. VOLT
Q314 BUFF
A+5V~2
IYAD (0...7)
IUAD (0...7)
IC21 BUFFER
IC24 BUFFER
Y CAM (0...7)
UV CAM (0...7)
(2/4)
IC5(1/2) SELECTOR
HD
I HD
I 2CLK
I ENCCLK2
IC5(2/2) SELECTOR
VD
I VD
FLD
I FLD
IC25-29 CLOCK GENERATOR
TP8 (HSYNC)
TP9 (VSYNC)
TP12 (FLD)
HSYNC CAM
VSYNC CAM
FLD CAM
TP10 (PCLKCAM)
TP11 (PCLK2XCAM)
PCLKQCAM
PCLK2XCAM
IC639 PCLK OUTPUT
TP624 (PCLKQSCN)
TP623 (PCLK2XSCN)
PCLKQCAM1V
PCLK2XCAM1V
PCLKQSCN1V
PCLK2XSCN1V
VREF
DEC SDA
DEC SCL
M BYP
A5V OFF
FLD CAM
IC642 BUFFER
YSIV (0...7)
Y SID (0...7)
IC643 BUFFER
UVSIV (0...7)
UV SID (0...7)
LOOP BACK SELECTOR
IC43
IC44
IC38
IC45
OYF (0...7)
OUVF (0...7)
Y CAM (0...7)
IC47 DIGITAL VIDEO ENCODER
COMP
TP15 (COMP)
RV5 COMP LEVEL
RSE-500 AND PMS-500P ONLY
Q26-28 COMP SYNC AMP
TP13 (Y)
TP14 (C)
SI SCK XCS
HD VD SCLK FLD
VRST F1
PCLK
IC46 I²C BUS CONTROLLER
SCL0 SDA0
X3 4.16 MHz
XTAL EXTAL
S1 HUE SELECTOR
PC 0 PC 3
RST
PD0 PD1 PD2
PE1 PE0 PB2
IC52 RESET
TP18 (RESET)
IC59 INVERTER
TP19 (OSDC)
Q29 CLOCK BUFFER
TP21 (SCLK)
X4 27 MHz OSC
RV4 FREQ ADJ
IC48 CLOCK DRIVER
TP16 (PCLK2XSCN)
I ENCCLK1
PCLKQSCN
PCLK2XSCN
I ENCCLK2
IC51 (2/2)
IC20,58,59 LOOP BACK SELECT SIGNAL
IC32 DATA SELECTOR
IC41, 42, 50, 51 (1/2) BINARY COUNTER
IC637, 638 VIDEO SYNCHRONIZER
TP620 (VSYNCSCN)
TP621 (HSYNCSCN)
TP622 (BLANKSCN)
VSYNCSCN1V
HSYNCSCN1V
BLANKSCN1V
MBLK
MBYP
IC53 DISPLAY CONTROLLER
VIN
V OUT
ADR 0 ADR 15
READ
DA 0 DA 7
XS EXS XD EXD
EXHSYNC EXVSYNC
SIN SCLK CS
VBLNK
RESET
Q23 VIDEO BUFFER
TP20 (V OUT)
IF VID0
CN105
IF, 205-3
IC54 CHARACTER GENERATOR
X5 14.31818MHz OSC
CV1 CHARACTER HORIZONTAL POSITION
CV2 OSDC FREQ.
OSD (0...2)
OSD2 OSD1 OSD0
IRQ5
(3/4)
(1/4)
DPR-86A(1/4)

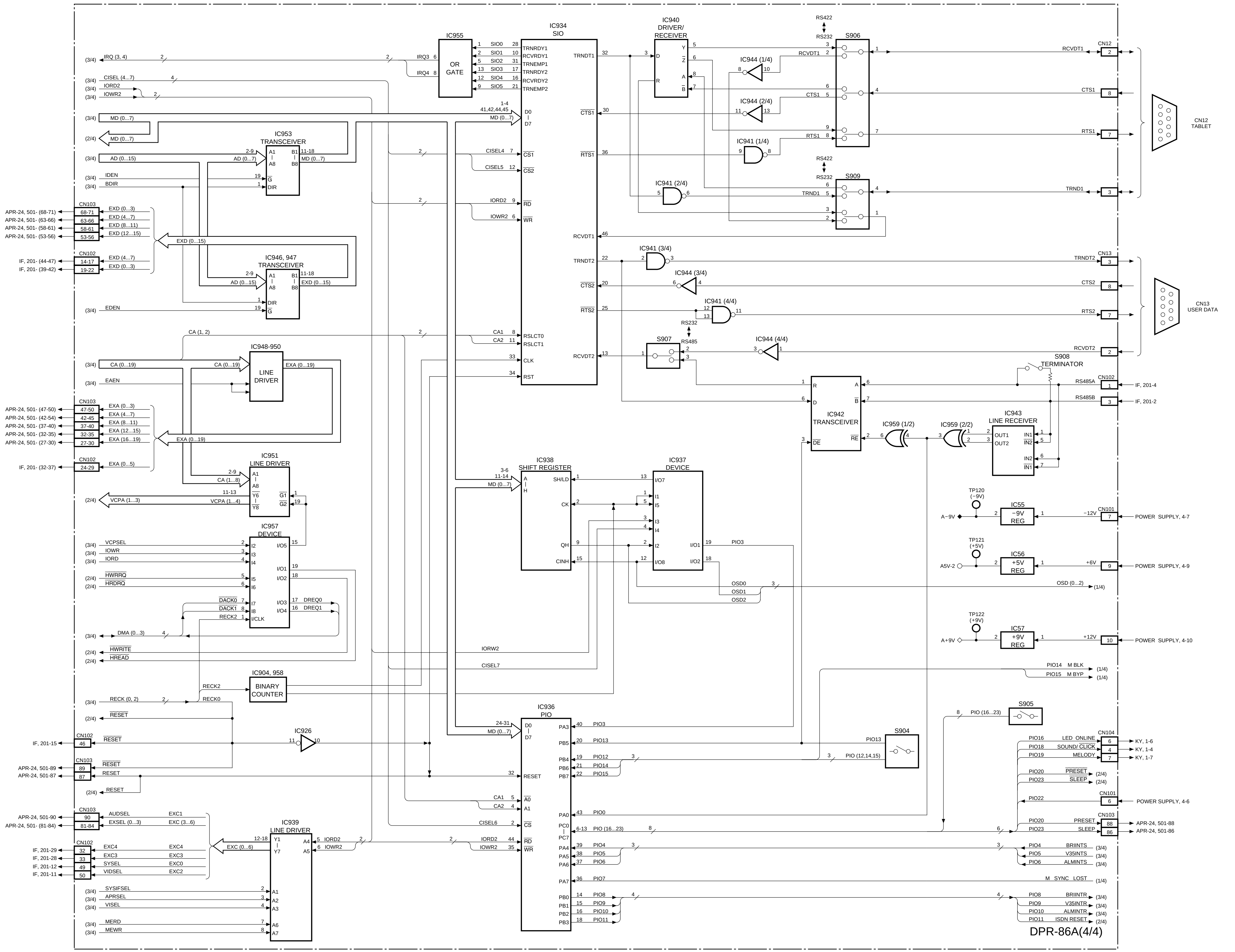
DPR-86A (2/4) ; ISDN I/F, VIDEO AD/DA VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU


IC616
TDM-ASIC
HD0 | HD7
HA0 | HA3
HCS
HRD
HWR
SD1
RD1
ST1
RT1
SD2
RD2
ST2
RT2
CLK12M
TBA1
TBB1
RBA1
RBB1
CK8K1
CK64K1
NETW8K
RESET
TDMFS
TDMCK
TDMDR
TDMDX
VD0 | VD7
VA0 | VA2
X OUT
X IN
VWR
VRD
VCS
PC0 | PC7
PA0 | PA7
PB
PD
X601
12.288MHz
MD (0...7)
CA (1...4)
TDMSEL
IORD2
IOWR2
CN102
IF, 201-26
IF, 201-25
IF, 201-24
IF, 201-23
IF, 201-21
IF, 201-20
IF, 201-19
IF, 201-18
TP607
(CLK12M)
12.288M
TBA
TBB
RBA
RBB
CK8K
CK64M
TP608
(NETW8K)
CN103
APR-24, 501-97
NETW8K
IC617-620
STATIC RAM
I/O 0 | I/O 7
A0 | A16
WE
CS
OE
LD (0...31)
LA (2...18)
IC626 (1/2)
VCP
LD0 | LD31
LA2 | LA18
DA0 | DA8
DBUS0 | DBUS31
LWRLL
LWRLH
LWRHL
LWRHH
LCE0
LOE
RAS
CAS0
CAS1
DWE
DOE
LCE2
TP609 (RAS)
TP610 (CAS0)
TP611 (CAS1)
TP612 (DWE)
IC622,623 (PMS-500P/400P)
IC624,625 (RSE-500/400)
DRAM
A0 | A9
I/O 1 | I/O 16
UCAS
LCAS
DA (0...8)
DBUS (0...31)
TP613 (TDMCK)
TP614 (TDMFS)
TP615 (TDMDR)
TP616 (TDMDX)
TP617 (TDMTSC)
IC626 (2/2)
VCP
TDMCLK
TDMTSC
YCAM0 | YCAM7
UDCAM0 | UDCAM7
YSCN0 | YSCN7
UVSCN0 | UVSCN7
HD0 | HD15
HIRQ
YCAM (0...7)
UVCAM (0...7)
YSIV (0...7)
UVSIV (0...7)
CD (0...15)
IRQ6
VSYNC CAM
HSYNC CAM
ODD CAM
FLD CAM
PCLK2XCAM
PCLKQCAM
PCLK2XCAM1 V
PCLKQCAM1 V
VSYNCSCN
HSYNCSCN
BLANKSCN
VSYNCSCN1 V
HSYNCSCN1 V
BLANKSCN1 V
PCLK2XSCN
PCLKQSCN
PCLK2XSCN1 V
PCLKQSCN1 V
HA0 | HA2
VCPA (1...3)
HWRITE
HREAD
HWRREQ
HRDREQ
TP618 (CPUCLK)
CPUCLK
X602
30MHz OSC
SLEEP
A OUT
A IN
ACLK
ARFS
ATFS
APR-24, 501-92
APR-24, 501-93
APR-24, 501-94
APR-24, 501-95
APR-24, 501-96
IC644
DECODE
POE3
POE2
POE0
POE1
X IN
X OUT
INT
WDOUT
POC0 | POC3
POD0 | POD3
POA0 | POA3
POB0 | POB3
POA (0...3), POB (0...3)
POC (0...3), POD (0...3)
X603
4MHz
IC645
IRQ7
CN104
SIRCS STROBE
KY, 1-5
CN15
EXT KEY
Q600
+6V
+5V
TP625
(SIRCS IN)
IC646 (1/3)
IC646 (2/3)
IC645 (1/2)
SIRCS
KY, 1-2
IC703
ISDN
EXTAL
TBA
TBB
RBA
RBB
CK8K
CK64K/128K
A0 | A14
DO/RQ1 D4/TQ1
D3/RQ4 D7/TQ4
ROMCS
RD
RAMCS
WR
DAD0 | DAD2
OD0 | OD7
CS
ORD
OWR
RESET
WDT
LTA
LTB
LRA
LRB
IC706
PROM
A0 | A14
O 0 | O 7
CE
OE
IC705
STATIC RAM
A0 | A12
I/O 0 | I/O 7
CE2
OE
CE1
WE
IC707
OR GATE
2A12
2A13
RAMCS
WR
2A (0...14)
2D (0...7)
ISDNSEL
IORD
IOWR
RESET
IC702 (1/3)
IC704 (1/2)
CN10
ISDN
TA
TB
RA
RB
T701
TRANSMIT TRANS
T702
RECEIVE TRANS
PRESET
IC646 (3/3)
IC645 (2/2)
IC702 (2/3)
IC704 (2/2)
ISDN RESET
IC702 (3/3)
IRQ10
(1/4)
(3/4)
(4/4)
DPR-86A(2/4)

DPR-86A (3/4) ; ISDN I/F, VIDEO AD/DA VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU


CN11 COMPUTER
CN11
RXD
TXD
CTS
RTS
IC954 (1/2)
IC906 (1/2)
IRQ (3,4)
IRQ5
IRQ (6,7,10)
CN102
ALINT
V35INT
IRQ8
IRQ9
IF, 201-16
IF, 201-10
IRQ (3...7)
IRQ (8...10)
IC904, 927
INTERRUPT LATCH
IC956
OR GATE
INTP7
BRIINTR
V35INTR
ALMINTR
BRIINTS
V35INTS
ALMINTS
DMA (0...3)
CN103
TOUT2
APR-24, 501-73
INTP (2...6)
INTP (2...7)
IC905
MICRO PROCESSOR
RXD
TXD
AD00
AD19
AD (0...19)
BUFR/W
ASTB
INTP2
INTP7
BS0
BS1
BS2
UBE
BUFEN
DREQ0
DACK0
DREQ1
DACK1
DMARQ0
DMAAK0
DMARQ1
DMAAK1
TOUT2
X1
X2
X901
19.6608MHz OSC
CLKOUT
RESET
IORD
IOWR
MRD
MWR
IC926 (1/4)
TP901 (CLK OUT)
RECK2
RECK1
RECK0
IC926 (2/4)
IC926 (3/4)
IC926 (4/4)
TP902 (RESET)
S901
RESET
IC903
RESET
Q902
+5V CHECK
IC908-910
ADDRESS LATCH
CA (0...19)
IC913, 914
TRANSCEIVER
AD (0...15)
CD (0...15)
BDIR
DIR
IC915
ADDRESS DECODE
I/O 0
I/O 7
AD (0.12...15.17...19)
I/O25
I/O9
I/O31
MSSEL
I/O10
I/O11
I/O12
I/O8
IN1
I/O29
I/O28
TPUSEL
TPLSEL
ESEL1
ESEL2
I/O14
I/O15
I/O24
I/O23
I/O22
EAEN
IDEN
EDEN
EXSEL0
EXSEL1
I/O27
I/O26
I/O20
I/O19
I/O18
SYSIFSEL
VISEL
APRSEL
RECK0
RECK1
IN0
SCLK/Y2
I/O21
I/O17
CIOSEL
INTSEL
IC917
FLASH MEMORY
A00
A17
CA (1...18)
D00
D15
CE
RESET
WE
OE
MEWR
MERD
IC920, 921
STATIC RAM
A00
A16
CA (1...17)
D00
D07
CS1
WE
OE
IC919
ADDRESS DECODER
G2A
CA (8...11)
CA11
G1
Y2
CISEL2
Y3
CISEL3
Y4
Y7
IC922
TIME CLOCK
A0
A3
CA (1...4)
D0
D3
CD (0...3)
OSCIN
OSCOUT
X902
32,768KHz
CS
RD
WR
IORD2
IOWR2
IC912
LINE DRIVER
A1
A4
A5
A8
A2
A3
A6
A7
Y6
Y7
Y2
Y3
Y4
Y5
Y1
Y8
EXSEL2
EXSEL3
CISEL (4...7)
BDIR
MERD
MEWR
IORD
IOWR
IORD2
IOWR2
RESET
AD (0...15) (4/4)
CA (0...19) (4/4)
CA (1...4) (2/4)
CD (0...15) (2/4)
EXSEL3
EXSEL2
EXSEL1
EXSEL0
APR-24, 501-79
APR-24, 501-78
APR-24, 501-77
APR-24, 501-76
RECK (0,2)
IC928
ADDRESS DECODE
CA (1,2,10,11)
VCPSEL
TDMSEL
ISDNSEL
Y0
Y1
Y2
UIO 0
UIO 1
UIO2
D902-909
IC923
LED DRIVER
Q1
Q8
D1
D8
CLK
MD (0...7)
IC956
S902-903
IC924, 925
DIP SW INPUT
G1
G2
DPR-86A(3/4)

DPR-86A (4/4) ; ISDN I/F, VIDEO AD/DA VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU

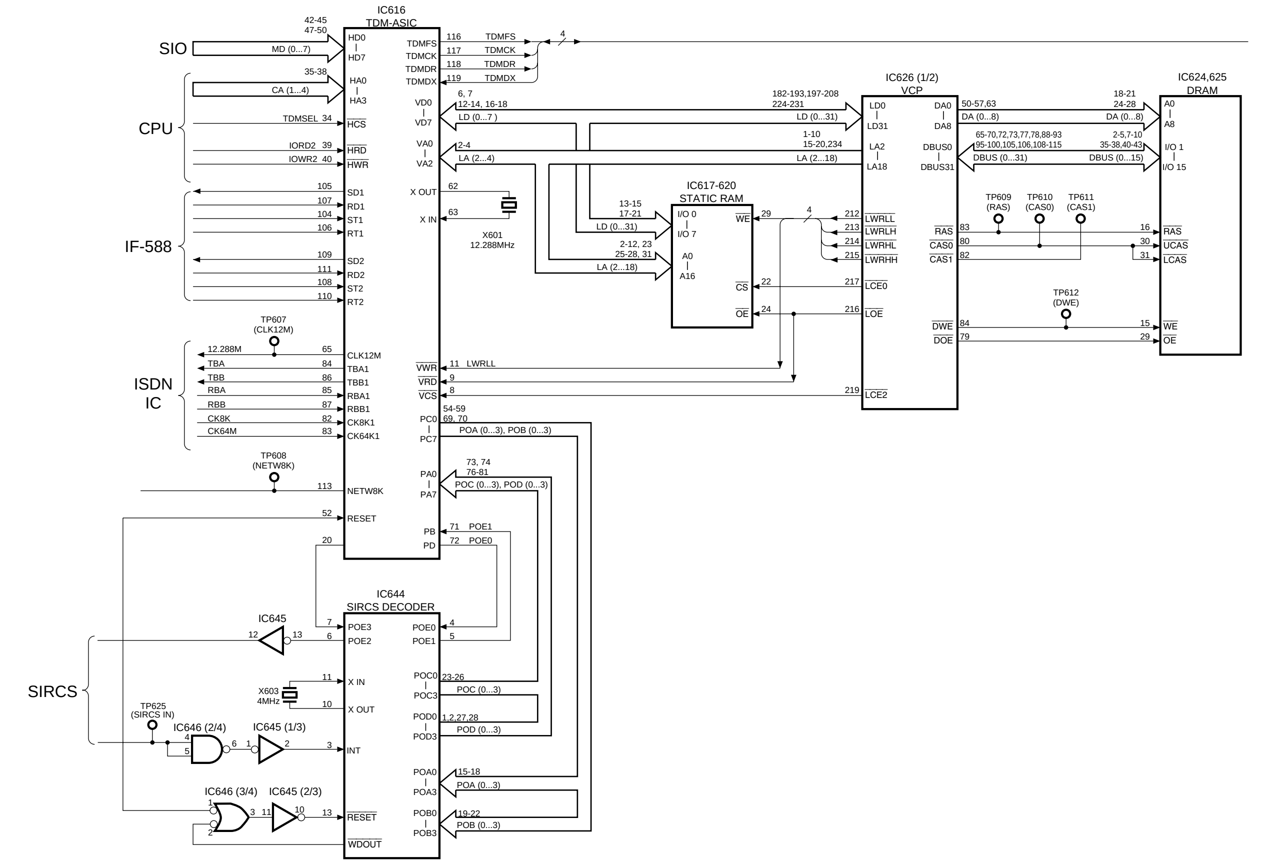

IC955
OR GATE
IC934
SIO
IC940
DRIVER/ RECEIVER
S906
RS422
RS232
IC944 (1/4)
IC944 (2/4)
IC941 (1/4)
IC941 (2/4)
S909
CN12
TABLET
IC953
TRANSCEIVER
IC946, 947
TRANSCEIVER
IC941 (3/4)
IC944 (3/4)
IC941 (4/4)
CN13
USER DATA
S907
RS485
IC944 (4/4)
S908
TERMINATOR
IC948-950
LINE DRIVER
IC942
TRANSCEIVER
IC959 (1/2)
IC959 (2/2)
IC943
LINE RECEIVER
IC951
LINE DRIVER
IC938
SHIFT REGISTER
IC937
DEVICE
IC957
DEVICE
TP120 (−9V)
IC55
−9V REG
TP121 (+5V)
IC56
+5V REG
TP122 (+9V)
IC57
+9V REG
POWER SUPPLY, 4-7
POWER SUPPLY, 4-9
POWER SUPPLY, 4-10
IC904, 958
BINARY COUNTER
IC926
IC936
PIO
S905
S904
IC939
LINE DRIVER
CN101
CN102
CN103
CN104
KY, 1-6
KY, 1-4
KY, 1-7
POWER SUPPLY, 4-6
DPR-86A(4/4)

[Video codec block]

This block consists of a high-speed SRAM (IC617 to IC620) for software operation, DRAM (IC622 and IC623 for PMS-500P/400P and IC624 and IC625 for RSE-500/400) for video display, and TDM-ASIC (IC616) for communication control, with VCP (IC626) in the center. The VCP is a 30-MHz clock RISC IC that compresses and decompress video data.

V50 CPU downloads programs to SRAM as I/O and exchanges commands for setting of the operation state. The video data is sent from this VCP to the ISDN line via TDM-ASIC. TDM-ASIC has a clock of 12.288 MHz. TDM-ASIC exchanges signals so that the data from VCP can be directly sent to the ISDN line. Moreover, using the extra I/O port of this IC, the decoder (IC644) of an SIRCS code (entered from the front key or external key) is connected so that it can communicate with CPU. (Refer to Fig. 2)

Fig.2


IC616
TDM-ASIC
SIO
MD (0...7)
42-45
47-50
HD0
HD7
CPU
CA (1...4)
35-38
HA0
HA3
TDMSEL 34
HCS
IORD2 39
HRD
IOWR2 40
HWR
IF-588
105 SD1
107 RD1
104 ST1
106 RT1
109 SD2
111 RD2
108 ST2
110 RT2
TP607
(CLK12M)
ISDN
IC
12.288M 65 CLK12M
TBA 84 TBA1
TBB 86 TBB1
RBA 85 RBA1
RBB 87 RBB1
CK8K 82 CK8K1
CK64M 83 CK64K1
TP608
(NETW8K)
113 NETW8K
52 RESET
20
116 TDMFS
117 TDMCK
118 TDMDR
119 TDMDX
4
6, 7
12-14, 16-18
VD0
VD7
LD (0...7)
2-4
VA0
VA2
LA (2...4)
62 X OUT
63 X IN
X601
12.288MHz
VWR 11 LWRLL
VRD 9
VCS 8
54-59
69, 70
PC0
PC7
POA (0...3), POB (0...3)
73, 74
76-81
PA0
PA7
POC (0...3), POD (0...3)
PB 71 POE1
PD 72 POE0
IC617-620
STATIC RAM
13-15
17-21
I/O 0
I/O 7
LD (0...31)
2-12, 23
25-28, 31
A0
A16
LA (2...18)
WE 29
CS 22
OE 24
IC626 (1/2)
VCP
182-193,197-208
224-231
LD (0...31)
LD0
LD31
1-10
15-20,234
LA (2...18)
LA2
LA18
212 LWRLL
213 LWRLH
214 LWRHL
215 LWRHH
217 LCE0
216 LOE
219 LCE2
DA0
DA8
50-57,63
DA (0...8)
DBUS0
DBUS31
65-70,72,73,77,78,88-93
95-100,105,106,108-115
DBUS (0...31)
RAS 83
CAS0 80
CAS1 82
DWE 84
DOE 79
TP609
(RAS)
TP610
(CAS0)
TP611
(CAS1)
TP612
(DWE)
IC624,625
DRAM
18-21
24-28
DA (0...8)
A0
A8
2-5,7-10
35-38,40-43
DBUS (0...15)
I/O 1
I/O 15
16 RAS
30 UCAS
31 LCAS
15 WE
29 OE
IC644
SIRCS DECODER
IC645
12 13
7 POE3
6 POE2
POE0 4
POE1 5
SIRCS
X603
4MHz
11 X IN
10 X OUT
POC0
POC3
23-26
POC (0...3)
POD0
POD3
1,2,27,28
POD (0...3)
TP625
(SIRCS IN)
IC646 (2/4)
IC645 (1/3)
3 INT
POA0
POA3
15-18
POA (0...3)
IC646 (3/4)
IC645 (2/3)
13 RESET
WDOUT
POB0
POB3
19-22
POB (0...3)

[Video A/D converter block]

A composite video input signal (IFVIDIN) is decoded to Y and color-difference signals using a video decoder (MC44011: IC1). Operation parameters of MC44011 in the operating mode are downloaded from I^2C bus controller CXP5068 (IC46) as serial data. Moreover, MC44011 performs sync separation, burst gate signal generation, ACC, and subcarrier reproduction. Using IC6 and IC7, MC44011 also generates a SYNC LOST signal, Y signal clamp pulse, color-difference signal clamp pulse from the sync separation signal, burst gate signal, and horizontal sync signal to be output. The decoded Y signal is passed through a level adjustment amplifier with a gain of approximately 6 dB. The reproduced signal is then converted from analog to digital by TLC5733 (IC302) to produce a digital Y signal. The digital Y signal is input through a buffer (IC21) to VCP (IC626). The sampling frequency is 13.5 MHz. The decoded color-difference signal is passed through a level adjustment amplifier with a gain of approximately 0 dB. The reproduced signal is then converted from analog to digital by TLC5733 (IC302) to produce a digital color-difference signal.

Time-multiplexed color-difference signals (R-Y and B-Y) are input through a buffer (IC24) to VCP (IC626). The sampling frequency is 6.75 MHz at the time of A/D conversion, but it is 13.5 MHz at the time of VCP input as a result of time multiplexing.

(Refer to the block diagram (1/4) of the DPR-86A board.)

[Video D/A converter block]

The digital Y signal from VCP is input through a buffer (IC642) to the Y signal selector (IC43 and IC44). An input video digital Y signal is also input to the selector. Usually, the signal from VCP is selected. However, the input video signal is selected in the analog A/D loopback mode.

The digital color-difference signal from VCP is also input through a buffer (IC643) to the selector (IC38 and IC45). The operation in the subsequent stage is the same as described above.

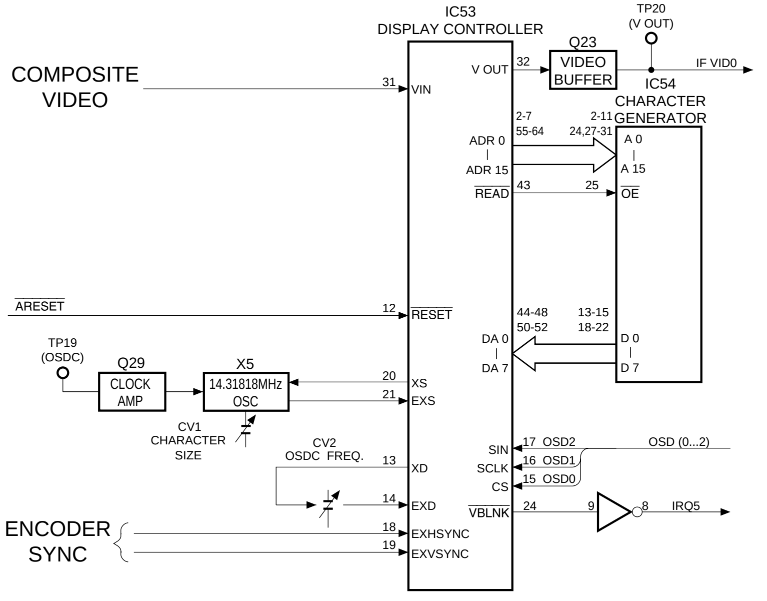
The digital Y and color-difference signals output from the selector are input to a digital video encoder (CXD1910: IC47). IC47 has a lot of internal functions as well as a D/A conversion function. IC47 generates a 13.5 MHz clock and sync signal from an external clock of 27 MHz. IC47 also converts the digital Y and color-difference signals from digital to analog so as to produce analog Y and color-difference signals and balance-modulates the color-difference signal so as to produce an ordinary chroma signal. Moreover, IC47 adds these produced signals to a Y signal and outputs a composite video signal.

The composite video signal is adjusted in a level and clamped to 1 V at the tip of a sync level. The signal is then input to a menu screen generator (MB90076: IC53). In the PMS-500P/400P or RSE-500/400, VCP is used for master synchronization. The sync signal in CXD1910 is synchronized by the signal obtained when the vertical sync signal in VCP is frequency-divided into 1/4. (Refer to the block diagram (1/4) of the DPR-86A board.)

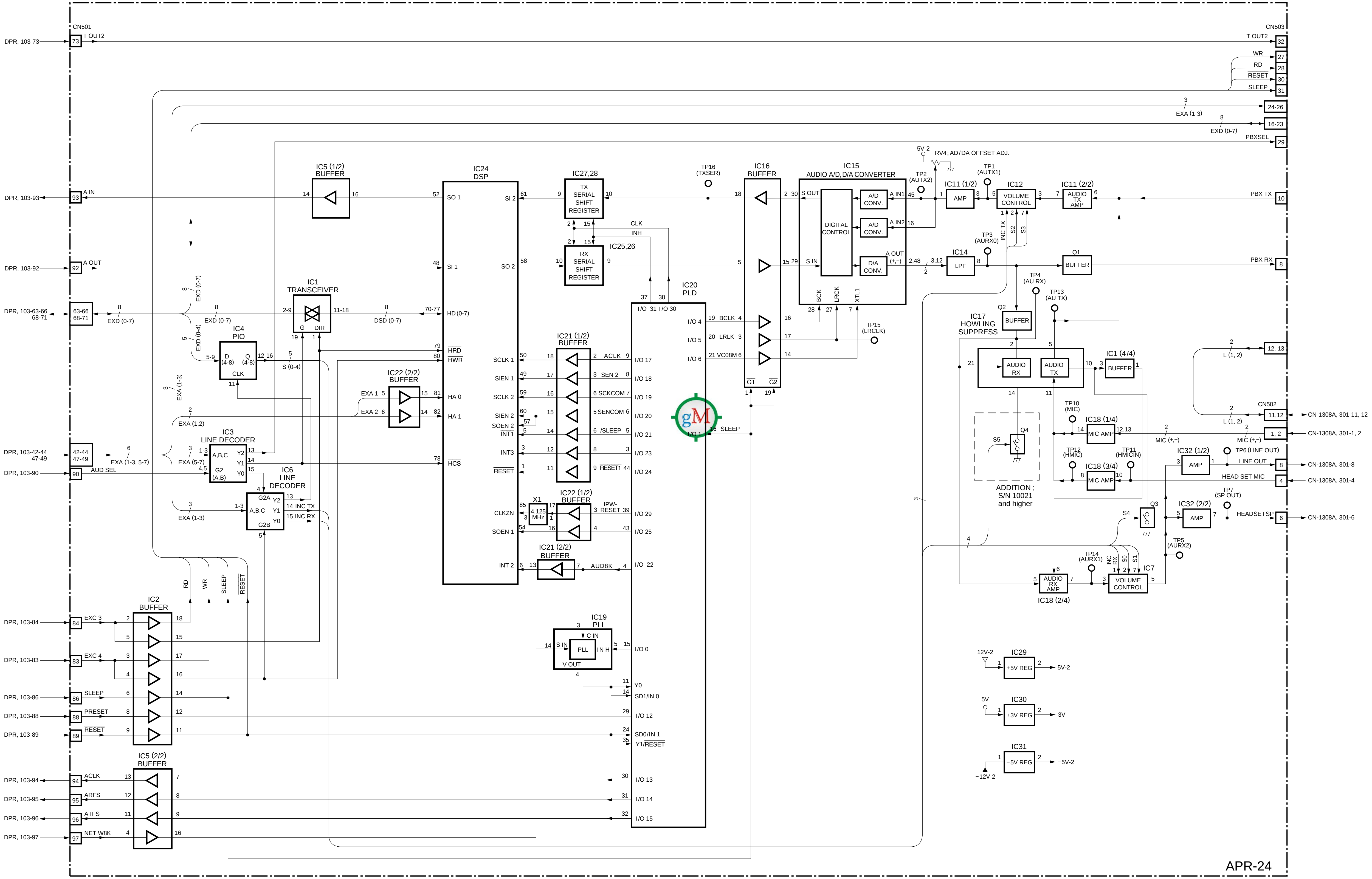
[Menu screen generator block]

The menu screen is generated by the CPU control operation based on the character data from a character generator (CY27C256: IC54) in MB90076 (IC53). The menu screen can be displayed independently or in the free superimposition state. (Refer to Fig. 3.)

Fig.3


IC53
DISPLAY CONTROLLER
COMPOSITE
VIDEO
31 VIN
V OUT 32
Q23
VIDEO
BUFFER
TP20
(V OUT)
IF VID0
IC54
CHARACTER
GENERATOR
2-7
55-64
2-11
24,27-31
ADR 0
ADR 15
A 0
A 15
READ 43
25 OE
ARESET
12 RESET
44-48
50-52
13-15
18-22
DA 0
DA 7
D 0
D 7
TP19
(OSDC)
Q29
CLOCK
AMP
X5
14.31818MHz
OSC
20 XS
21 EXS
CV1
CHARACTER
SIZE
CV2
OSDC FREQ.
13 XD
14 EXD
SIN 17 OSD2
SCLK 16 OSD1
CS 15 OSD0
OSD (0...2)
VBLNK 24
9
8
IRQ5
ENCODER
SYNC
18 EXHSYNC
19 EXVSYNC

APR-24 ; AUDIO AD/DA AUDIO COMPRESS/DECOMPRESS


CN501
CN503
CN502
T OUT2
WR
RD
RESET
SLEEP
EXA (1-3)
EXD (0-7)
PBXSEL
A IN
A OUT
AUD SEL
DPR, 103-73
DPR, 103-93
DPR, 103-92
DPR, 103-63-66 68-71
DPR, 103-42-44 47-49
DPR, 103-90
DPR, 103-84
DPR, 103-83
DPR, 103-86
DPR, 103-88
DPR, 103-89
DPR, 103-94
DPR, 103-95
DPR, 103-96
DPR, 103-97
IC5 (1/2) BUFFER
IC5 (2/2) BUFFER
IC1 TRANSCEIVER
IC4 PIO
IC3 LINE DECODER
IC6 LINE DECODER
IC2 BUFFER
IC22 (2/2) BUFFER
IC22 (1/2) BUFFER
IC24 DSP
IC27,28 TX SERIAL SHIFT REGISTER
IC25,26 RX SERIAL SHIFT REGISTER
IC21 (1/2) BUFFER
IC21 (2/2) BUFFER
X1 4.125 MHz
IC19 PLL
IC20 PLD
IC16 BUFFER
IC15 AUDIO A/D, D/A CONVERTER
DIGITAL CONTROL
A/D CONV.
D/A CONV.
TP16 (TXSER)
TP15 (LRCLK)
TP2 (AUTX2)
TP1 (AUTX1)
TP3 (AURX0)
TP4 (AU RX)
TP13 (AU TX)
5V-2 RV4; AD/DA OFFSET ADJ.
IC11 (1/2) AMP
IC12 VOLUME CONTROL
IC11 (2/2) AUDIO TX AMP
IC14 LPF
Q1 BUFFER
Q2 BUFFER
IC17 HOWLING SUPPRESS
AUDIO RX
AUDIO TX
IC1 (4/4) BUFFER
IC18 (1/4) MIC AMP
IC18 (3/4) MIC AMP
IC18 (2/4) AUDIO RX AMP
IC7 VOLUME CONTROL
IC32 (1/2) AMP
IC32 (2/2) AMP
TP10 (MIC)
TP12 (HMIC)
TP11 (HMICIN)
TP6 (LINE OUT)
TP7 (SP OUT)
TP5 (AURX2)
TP14 (AURX1)
S5
Q4
S4
Q3
ADDITION ; S/N 10021 and higher
PBX TX
PBX RX
L (1, 2)
MIC (+,–)
LINE OUT
HEAD SET MIC
HEADSET SP
CN-1308A, 301-11, 12
CN-1308A, 301-1, 2
CN-1308A, 301-8
CN-1308A, 301-4
CN-1308A, 301-6
IC29 +5V REG 12V-2 5V-2
IC30 +3V REG 5V 3V
IC31 –5V REG –12V-2 –5V-2
EXC 3
EXC 4
PRESET
ACLK
ARFS
ATFS
NET W8K
CLK
INH
BCLK
LRCK
XTL1
BCK
VC08M
SCKCOM
SENCOM
AUD8K
APR-24

9-2. APR-24 BOARD

This board treats the whole audio processing. It consists of an audio codec, A/D converter, D/A converter, volume control, switch, microphone amplifier, and output buffer.

[Audio code block]

This block performs the processing based on a G.728 system by DSP (UPD77017: IC24). Signals (CODRX, CODTX, ACLK, ARFS, ATFS, and NETW8K) for interface with VCP on the DPR-86A board, and a DSP control signal are generated by PLD (PLSI2032: IC20).

[Audio send block]

The input signals of a headphone microphone and external microphone are amplified using a microphone amplifier, mixed, and input to an audio switch (MC34118: IC17). In IC17, the received audio (AURX) level is compared with the microphone audio level. If the received audio level is higher, the howling is suppressed by lowering the microphone audio level. The microphone audio output (AUTX) signal of IC17 is adjusted in a microphone level using an electronic volume controller (X9313: IC12), passed through a filter, and converted into a digital signal using an A/D converter (CXD2570: IC15). CXD2579 has a sampling frequency of 8 kHz, but the sampling frequency of the audio codec is 16 kHz. Therefore, the digitized AUTX signal is speed-converted using IC27 and IC28, then sent to the audio codec block.

[Audio receive block]

The compressed audio signal from VCP on the DPR-86A board is expanded by an audio codec block. The signal is then speed-converted using IC25 and IC26 so as to correspond to a sampling frequency of 8 kHz and converted into an analog signal using a D/A converter (CXD2570: IC15). This output signal is passed through an amplifier filter (AURX), input to an audio switch (MC34118: IC17) to produce a signal for howling suppression. To reduce a sense of incongruity occurring when the audio switch is activated, the AURX signal in a main signal line bypasses the audio switch so that it undergoes no influence. After that, the signal is adjusted in a line level using an electronic volume controller
(X9313: IC7) and sent through a buffer to the line output and headphones.
(Refer to the block diagram of the APR-24 board.)

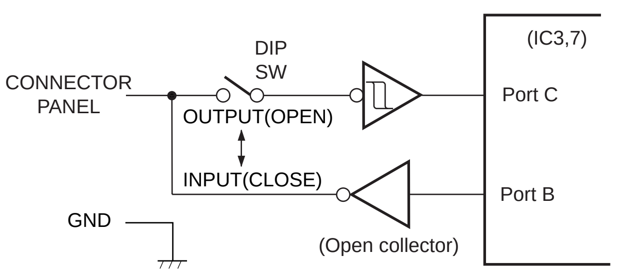
9-3. IF-588A BOARD

This board mounts each input/output selection circuit. It mainly consists of a PIO, register, and video switch. The PIO is controlled by the signal from the DPR-86A board. This board selects the camera control signal, alarm input signal, relay output signal, and nine-channel video input signal on the connector panel.

[Camera control/relay output block and alarm input block]

These blocks have the circuit configuration shown in Fig. 4. The input and output operations can be selected using a DIP switch (S1, S2 and S3).

Fig.4



For the input operation, the DIP switch is set to ON (CLOSE) and the mechanical contact switch is connected to the connector pin. For the output operation, the DIP switch is set to OFF (OPEN). The output IC circuit has an open collector. The rating is 40 V and 40 mA.

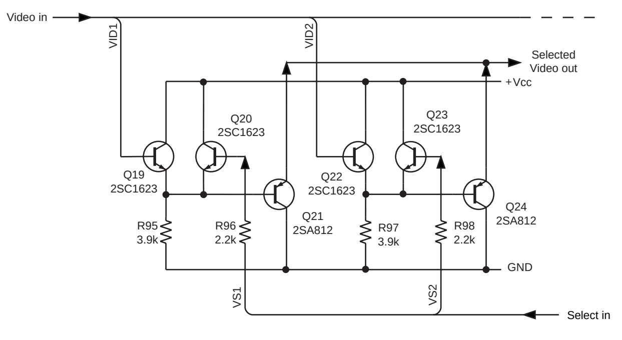
* This DIP switch is set at the factory as follows:
PMS-500P, RSE-500 : ON (CLOSE) for input operation
PMS-400P, RSE-400 : OFF (OPEN) for output operation

The alarm input block is used exclusively for the input operation without an output IC. This input signal is ORed to produce an interrupt signal for CPU.

[Video switcher block]

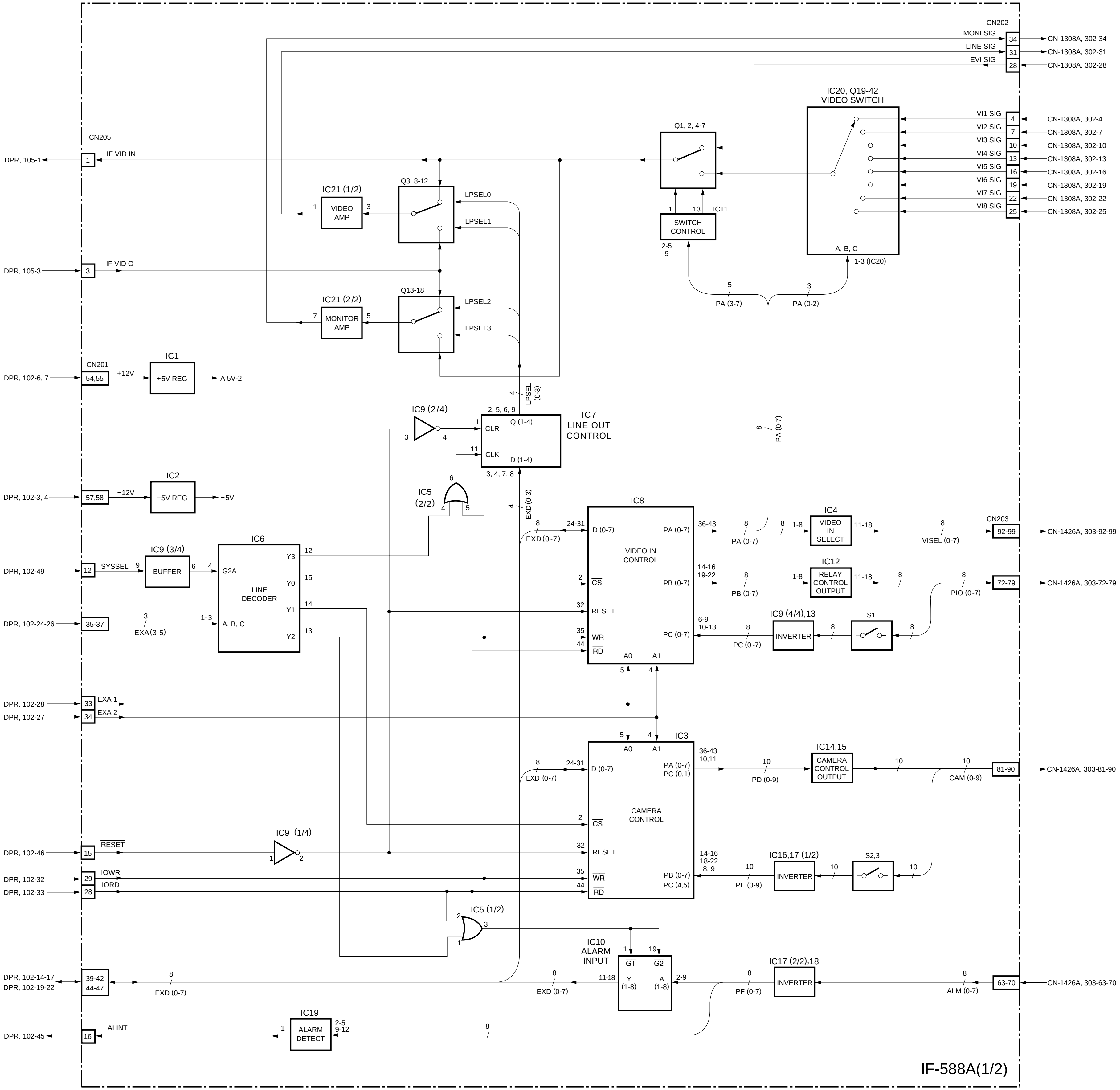
This block is a discrete circuit constituted by transistors. It consists of nine-input/one-output switches. (Refer to Fig. 5.)

Fig.5



For the commands issued to this switcher, commands 0 to 7 are selected from VIDEO IN 1 to 8 on the connector panel. Commands 8 to 255 are selected from EXT VIDEO IN on the connector panel, and ninth to 256th selection signals are output to the CAMERA SELECT connector in a binary TTL level.

IF-588A ; VIDEO IN SELECT, PARALLEL I/O


CN205
DPR, 105-1
IF VID IN
DPR, 105-3
IF VID O
IC21 (1/2)
VIDEO AMP
IC21 (2/2)
MONITOR AMP
Q3, 8-12
Q13-18
LPSEL0
LPSEL1
LPSEL2
LPSEL3
CN201
DPR, 102-6, 7
54,55
+12V
IC1
+5V REG
A 5V-2
IC2
DPR, 102-3, 4
57,58
−12V
−5V REG
−5V
Q1, 2, 4-7
SWITCH CONTROL
IC11
IC20, Q19-42
VIDEO SWITCH
A, B, C
1-3 (IC20)
PA (3-7)
PA (0-2)
CN202
MONI SIG
LINE SIG
EVI SIG
CN-1308A, 302-34
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VI2 SIG
VI3 SIG
VI4 SIG
VI5 SIG
VI6 SIG
VI7 SIG
VI8 SIG
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CN-1308A, 302-10
CN-1308A, 302-13
CN-1308A, 302-16
CN-1308A, 302-19
CN-1308A, 302-22
CN-1308A, 302-25
IC9 (2/4)
IC7
LINE OUT CONTROL
CLR
CLK
Q (1-4)
D (1-4)
LPSEL (0-3)
IC5 (2/2)
EXD (0-3)
IC8
VIDEO IN CONTROL
D (0-7)
CS
RESET
WR
RD
A0
A1
PA (0-7)
PB (0-7)
PC (0-7)
IC4
VIDEO IN SELECT
VISEL (0-7)
CN203
92-99
CN-1426A, 303-92-99
IC12
RELAY CONTROL OUTPUT
PIO (0-7)
72-79
CN-1426A, 303-72-79
IC9 (4/4),13
INVERTER
S1
IC9 (3/4)
DPR, 102-49
SYSSEL
BUFFER
IC6
LINE DECODER
G2A
Y3
Y0
Y1
Y2
DPR, 102-24-26
35-37
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DPR, 102-28
DPR, 102-27
EXA 1
EXA 2
IC3
CAMERA CONTROL
PA (0-7)
PC (0,1)
PB (0-7)
PC (4,5)
IC14,15
CAMERA CONTROL OUTPUT
PD (0-9)
CAM (0-9)
81-90
CN-1426A, 303-81-90
IC9 (1/4)
DPR, 102-46
RESET
DPR, 102-32
IOWR
DPR, 102-33
IORD
IC16,17 (1/2)
INVERTER
S2,3
PE (0-9)
IC5 (1/2)
IC10
ALARM INPUT
G1
G2
Y (1-8)
A (1-8)
IC17 (2/2),18
INVERTER
PF (0-7)
ALM (0-7)
63-70
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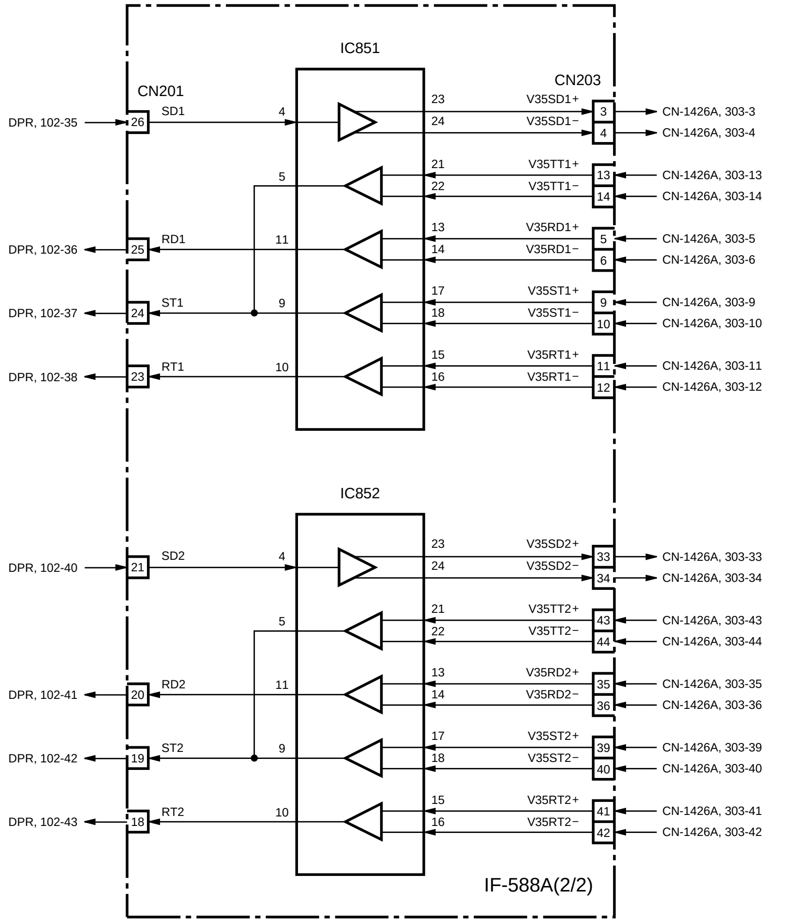
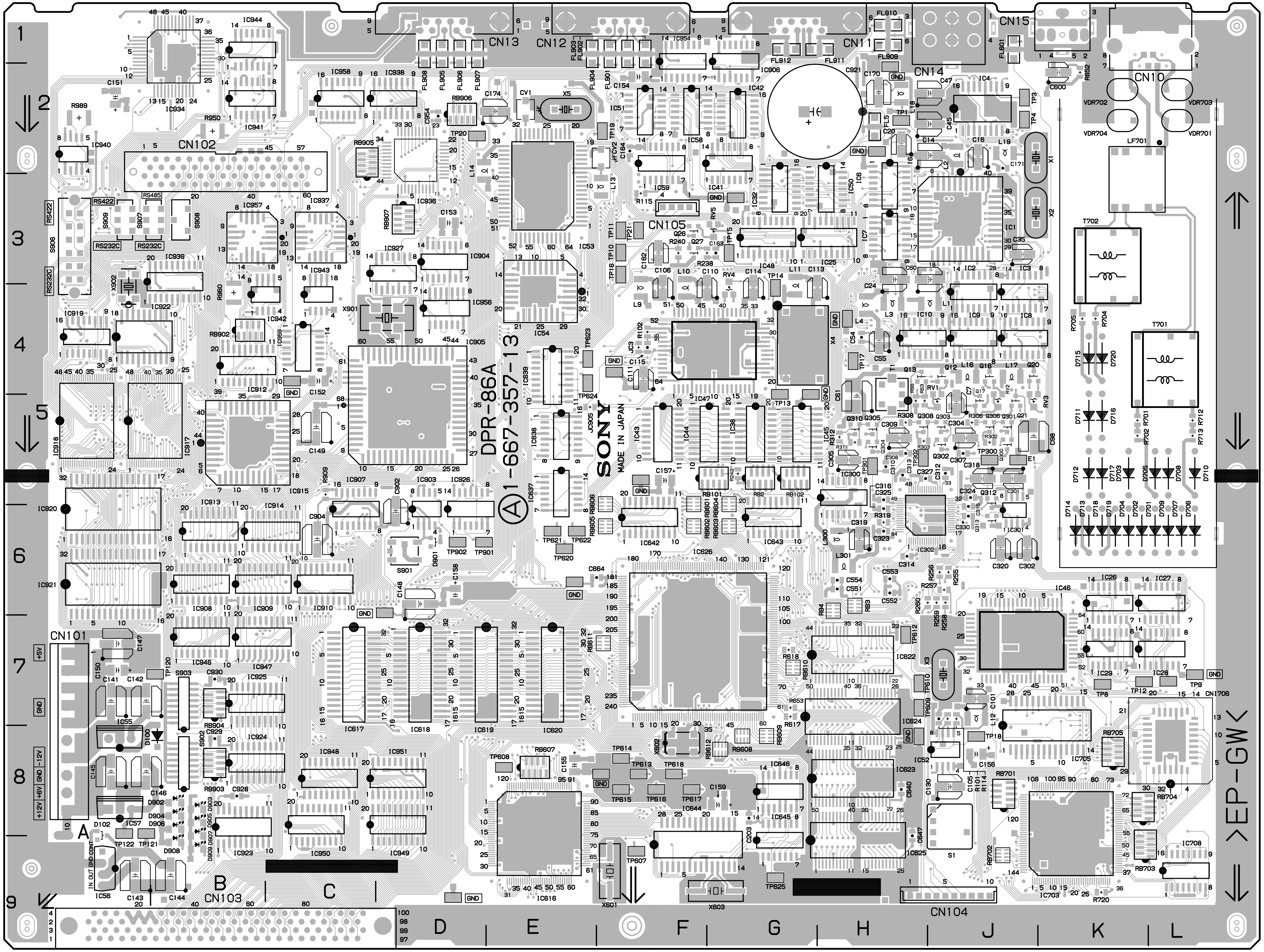
DPR, 102-14-17
DPR, 102-19-22
39-42
44-47
EXD (0-7)
IC19
ALARM DETECT
ALINT
DPR, 102-45
IF-588A(1/2)


IC851
CN201
CN203
DPR, 102-35
SD1
V35SD1+
V35SD1−
CN-1426A, 303-3
CN-1426A, 303-4
V35TT1+
V35TT1−
CN-1426A, 303-13
CN-1426A, 303-14
DPR, 102-36
RD1
V35RD1+
V35RD1−
CN-1426A, 303-5
CN-1426A, 303-6
DPR, 102-37
ST1
V35ST1+
V35ST1−
CN-1426A, 303-9
CN-1426A, 303-10
DPR, 102-38
RT1
V35RT1+
V35RT1−
CN-1426A, 303-11
CN-1426A, 303-12
IC852
DPR, 102-40
SD2
V35SD2+
V35SD2−
CN-1426A, 303-33
CN-1426A, 303-34
V35TT2+
V35TT2−
CN-1426A, 303-43
CN-1426A, 303-44
DPR, 102-41
RD2
V35RD2+
V35RD2−
CN-1426A, 303-35
CN-1426A, 303-36
DPR, 102-42
ST2
V35ST2+
V35ST2−
CN-1426A, 303-39
CN-1426A, 303-40
DPR, 102-43
RT2
V35RT2+
V35RT2−
CN-1426A, 303-41
CN-1426A, 303-42
IF-588A(2/2)

SECTION 10

SCHEMATIC DIAGRAMS AND BOARD LAYOUTS

	Board Name	Circuit Function	Page	Remarks
A	APR-24	AUDIO AD/DA AUDIO COMPRESS/DECOMPRESS	10-15	
C	CN-1308A	VIDEO IN/OUT CONNECTOR AUDIO IN/OUT CONNECTOR	10-26	CN-1308AH (RSE-500, PMS-500P) CN-1308AM (RSE-400, PMS-400P)
	CN-1426A	ALARM IN CONNECTOR, RELAY CONTROL CONNECTOR	10-28	
D	DPR-86A	ISDN I/F, VIDEO AD/DA, VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU	10-2	DPR-86AHN/86AHNR (RSE-500) DPR-86AMN (RSE-400) DPR-86AHP (PMS-500P) DPR-86AMP (PMS-400P)
I	IF-588A	VIDEO IN SELECT, PARALLEL I/O,	10-20	
K	KY-358	TOUCH KEY BOARD, SIRCS RECEIVE, LED INDICATOR, RINGER	10-31	
P	PE-18	POWER LED	10-31	


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
J
K
L
CN13
CN12
CN11
CN14
CN15
CN10
CN102
CN105
CN101
CN103
CN104
CNI706
DPR-86A
1-667-357-13
A
SONY
MADE IN JAPAN
EP-GW
RS422
RS485
RS232C
+5V
GND
-12V
+6V
+12V
GND
IN OUT GND CONT

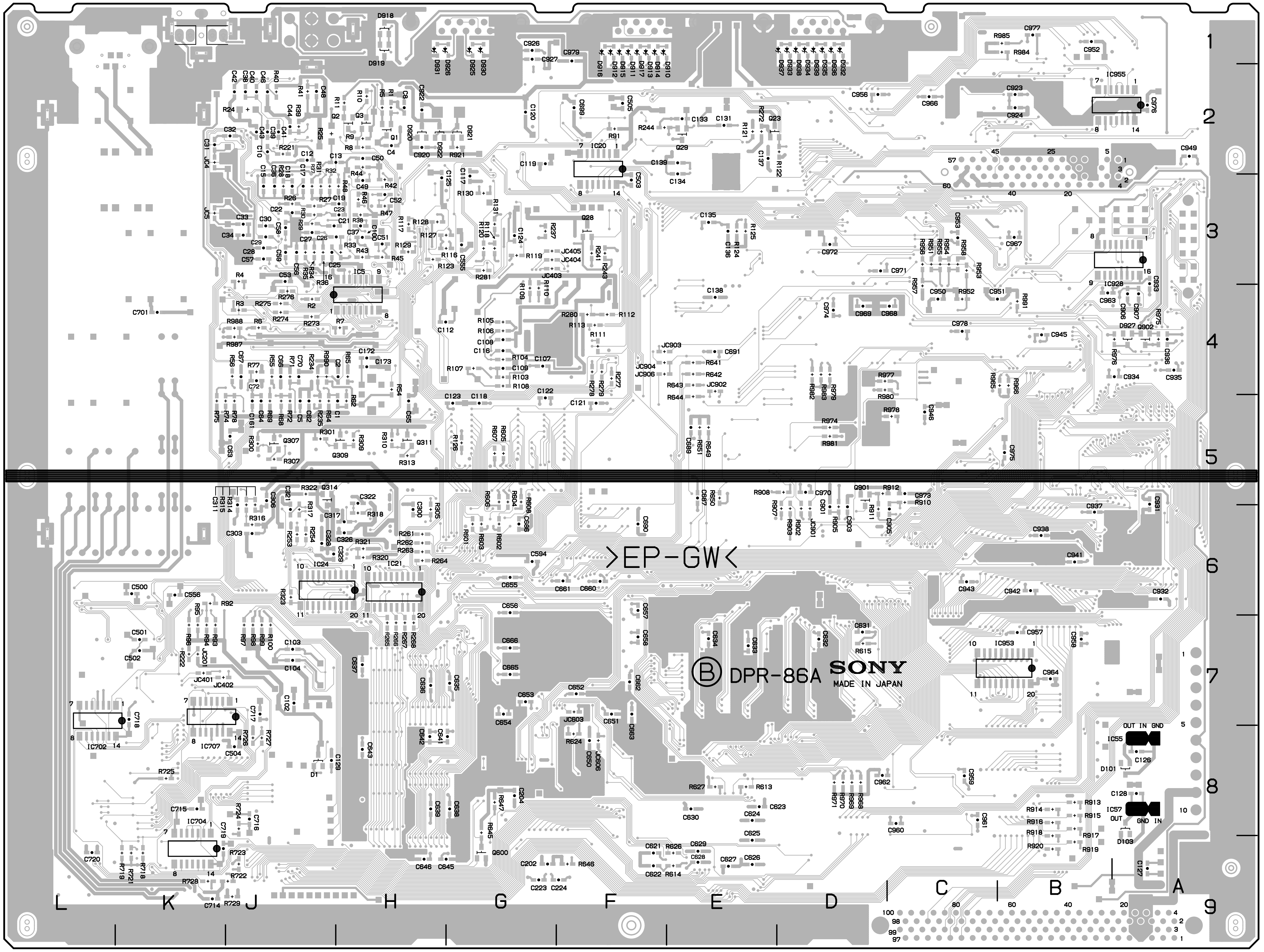
DPR-86A -A SIDE-

1-667-357-13

*: B SIDE

CNI706	L8
CN10	L2
CN11	G1
CN12	F1
CN13	D1
CN15	K1
CN101	A8
CN102	A2
CN103	A9
CN104	H9
CN105	F3
CV1	E2
CV2	F2
*D1	J8
D100	B7
*D101	A8
D102	A8
*D103	A8
D701	L6
D702	K6
D703	K5
D704	K6
D705	L5
D706	L6
D707	L6
D708	L5
D709	L6
D710	L5
D711	K4
D712	K5
D713	K6
D714	K6
D715	K4
D716	K4
D717	K5
D718	K6
D719	K6
D720	K4
D901	D6
D902	B8
D903	B8
D904	B8
D905	B8
D906	B8
D907	B8
D908	B9
D909	B9
*D910	E1
*D911	F1
*D912	F1
*D913	F1
*D914	F1
*D915	F1
*D916	F1
*D917	F1
*D920	H2
*D921	G2
*D922	H2
*D925	G1
*D926	G1
*D927	A4
*D930	G1
*D931	H1
*D932	D1
*D933	D1
*D934	D1
*D935	D1
*D936	D1
*D937	D1
*D938	D1
*D939	D1
E1	J5
FL5	H2
FL601	J1
FL602	J2
FL901	F1
FL902	F1
FL903	F1
FL904	E1
FL905	D1
FL906	D1
FL907	D1
FL908	D1
FL911	H1
FL912	G1
IC1	J3
IC2	J4
IC3	J4
IC4	J2
*IC5	H4
*IC5	L7
IC6	H3
IC7	H3
IC8	J4
IC9	J4
IC10	H4
*IC20	F2
*IC20	F3
*IC21	H6
*IC24	J6
IC25	H3
IC26	K6
IC27	L6
IC28	L7
IC29	K7
IC32	G3
IC38	G5
IC41	G2
IC42	G2
IC43	F5
IC44	G5
IC45	G5
IC46	J7
IC47	G4
IC48	G3
IC50	H3
IC51	F2
IC52	J8
IC53	E3
IC54	E4
IC55	A8
IC56	A9
IC57	A8
IC58	F2
IC59	F2
IC300	H5
IC301	J6
IC302	H6
IC616	E8
IC617	C7
IC618	D7
IC619	D7
IC620	E7
IC622	H7
IC623	H8
IC624	H7
IC625	H9
IC626	F7
IC637	E5
IC638	E5
IC639	E4
IC642	F6
IC643	G6
IC644	F9
IC645	G9
IC646	G8
*IC702	L7
IC703	K8
*IC704	K9
IC705	K7
IC706	L8
*IC707	K7
IC903	D6
IC904	D3
IC905	D5
IC906	G1
IC908	B6
IC909	B6
IC910	C6
IC912	B4
IC913	B6
IC914	C6
IC915	B5
IC917	B5
IC919	A4
IC920	A6
IC921	A6
IC922	A4
IC923	B8
IC924	B8
IC925	B7
IC926	D6
IC927	D3
*IC928	A3
IC934	B1
IC936	D2
IC937	C3
IC938	D2
IC939	B3
IC940	A2
IC941	B2
IC942	B4
IC943	C4
IC944	B1
IC946	B7
IC947	B7

IC948	C8
IC949	D8
IC950	C8
IC951	D8
*IC953	B7
IC954	F1
*IC955	A2
IC956	D4
IC957	B3
IC958	C2
IC959	C4
*JC1	F4
JC3	F4
*JC4	K2
*JC5	K3
*JC201	K7
*JC401	K7
*JC402	K7
*JC403	G3
*JC404	G3
*JC405	G3
*JC603	F7
*JC901	D6
LF701	L2
L1	J4
L2	J2
L3	H4
L4	H4
L9	F4
L10	F4
L11	G4
L12	J7
L13	F3
L14	D2
L14	F4
L16	J4
L17	J4
L18	H2
L19	J2
L300	H6
L301	H6
*Q1	H2
*Q2	H2
*Q3	H2
Q12	J4
Q13	H4
Q16	J4
Q17	J5
Q20	J4
Q21	J5
*Q23	E2
Q26	F3
Q27	F3
*Q28	F3
*Q29	E2
Q300	J5
Q301	J5
Q302	J5
Q303	J5
Q304	H5
Q305	H5
Q306	J5
*Q307	J5
Q308	H5
*Q309	H5
Q310	H5
*Q311	H5
Q312	J5
Q313	J6
*Q314	J5
*Q902	A4
RB2	G5
RB3	H6
RB4	H6
RB101	G5
RB102	G5
RB601	F5
RB602	F6
RB603	G6
RB604	G5
RB605	F6
RB606	F5
RB607	E8
RB608	G8
RB609	G8
RB610	G7
RB611	F7
RB612	G8
RB701	J8
RB702	J9
RB703	K9
RB704	K8
RB705	K8
RB902	B4
RB903	B8
RB904	B7
RB905	C2
RB906	D2
RB907	D3
RV1	J5
RV2	J5
RV3	J5
RV4	G4
RV5	G3
S1	J8
S901	D6
S902	B8
S903	B7
S906	A3
S907	A3
S908	B3
S909	A3
TP1	H2
TP3	J2
TP4	J2
TP8	K7
TP9	L7
TP10	F3
TP11	F3
TP12	K7
TP13	G4
TP14	G4
TP15	G3
TP16	F3
TP17	H4
TP18	J8
TP19	F2
TP20	D2
TP21	F3
TP104	H8
TP105	D9
TP106	F8
TP107	D6
TP108	C4
TP110	E6
TP111	L7
TP112	G4
TP113	H4
TP114	H2
TP115	G3
TP116	H2
TP118	F4
TP119	F5
TP120	B7
TP121	A8
TP122	A8
TP300	J5
TP301	H5
TP302	H5
TP607	F9
TP608	E8
TP609	H7
TP610	H7
TP612	H7
TP613	F8
TP614	F8
TP615	F8
TP616	F8
TP617	F8
TP618	F8
TP620	E6
TP621	E6
TP622	E6
TP623	E4
TP624	E4
TP625	G9
TP901	D6
TP902	D6
T1	H4
T701	K5
T702	K4
X1	J2
X2	J3
X3	J7
X4	G4
X5	E2
X601	F9
X602	F8
X603	G9
X901	D4
X902	A4

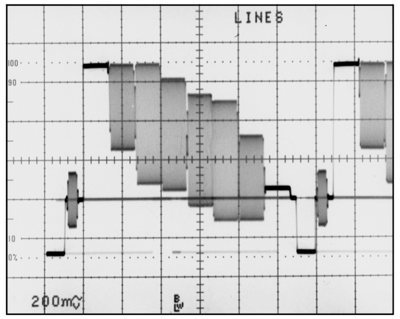


DPR-86A -B SIDE-
1-667-357-13

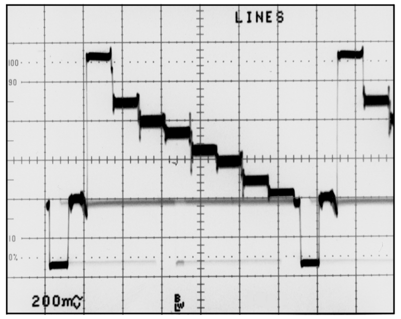
DPR-86A

DPR-86 (1/10)

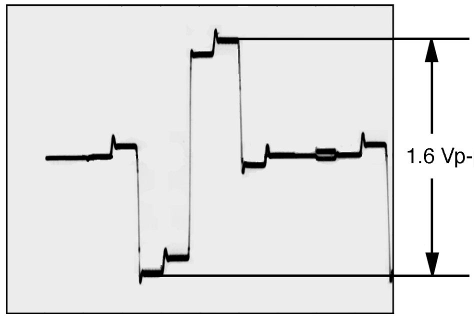
①TP1 (H-2)



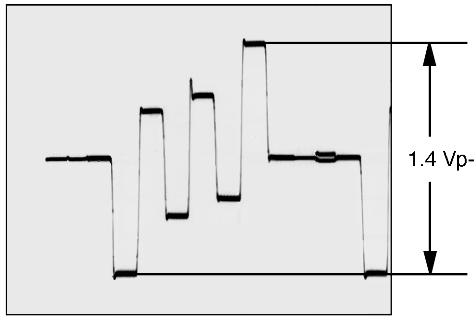
②TP17 (H-4)



③TP4 (J-2)

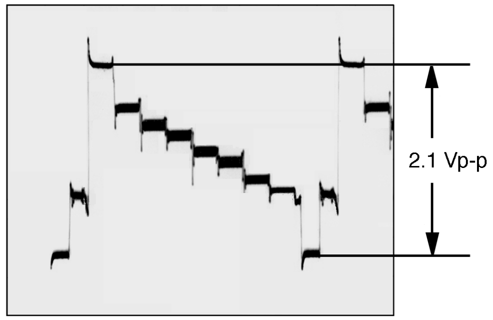


④TP3 (J-2)

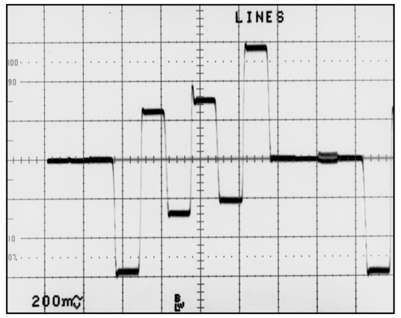


DPR-86 (2/10)

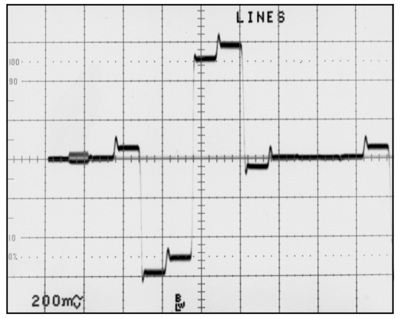
①TP301 (H-5)



②TP302 (H-5)

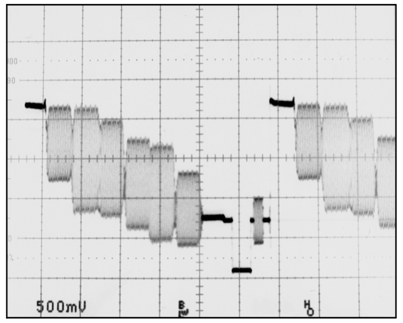


③TP300 (J-5)

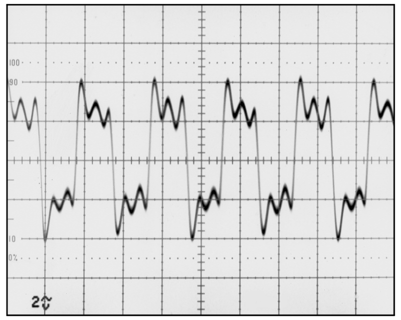


DPR-86 (3/10)

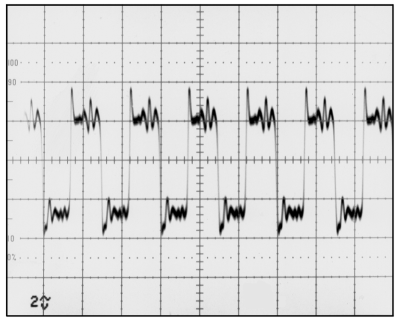
①TP15 (G-3)



②TP21 (F-3)

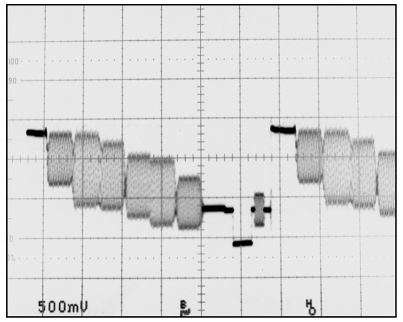


③TP16 (F-3)

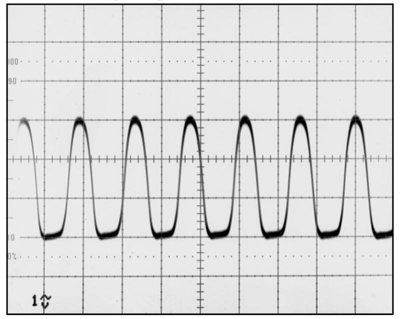


DPR-86 (4/10)

①TP20 (D-2)

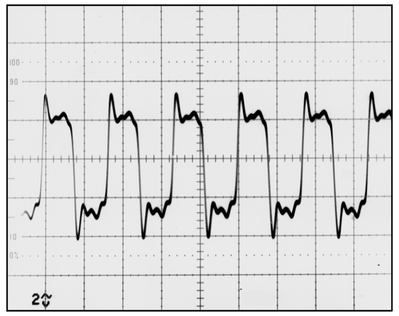


②TP19 (F-2)

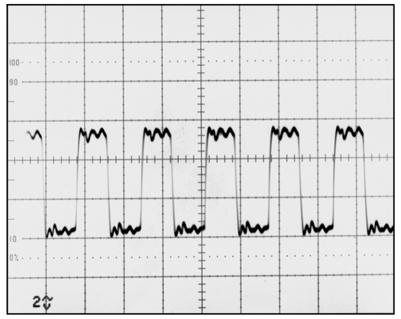


DPR-86 (5/10)

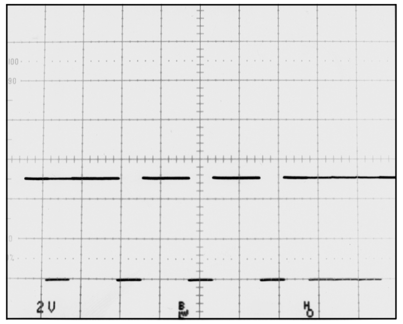
①TP618 (F-8)



②TP607 (F-9)



③TP625 (G-9)



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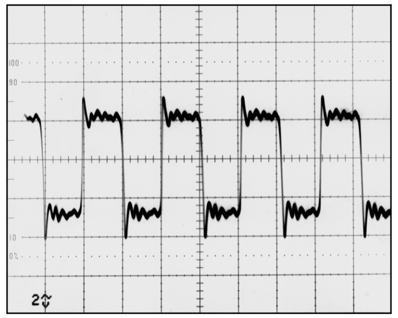
DPR-86 (7/10)

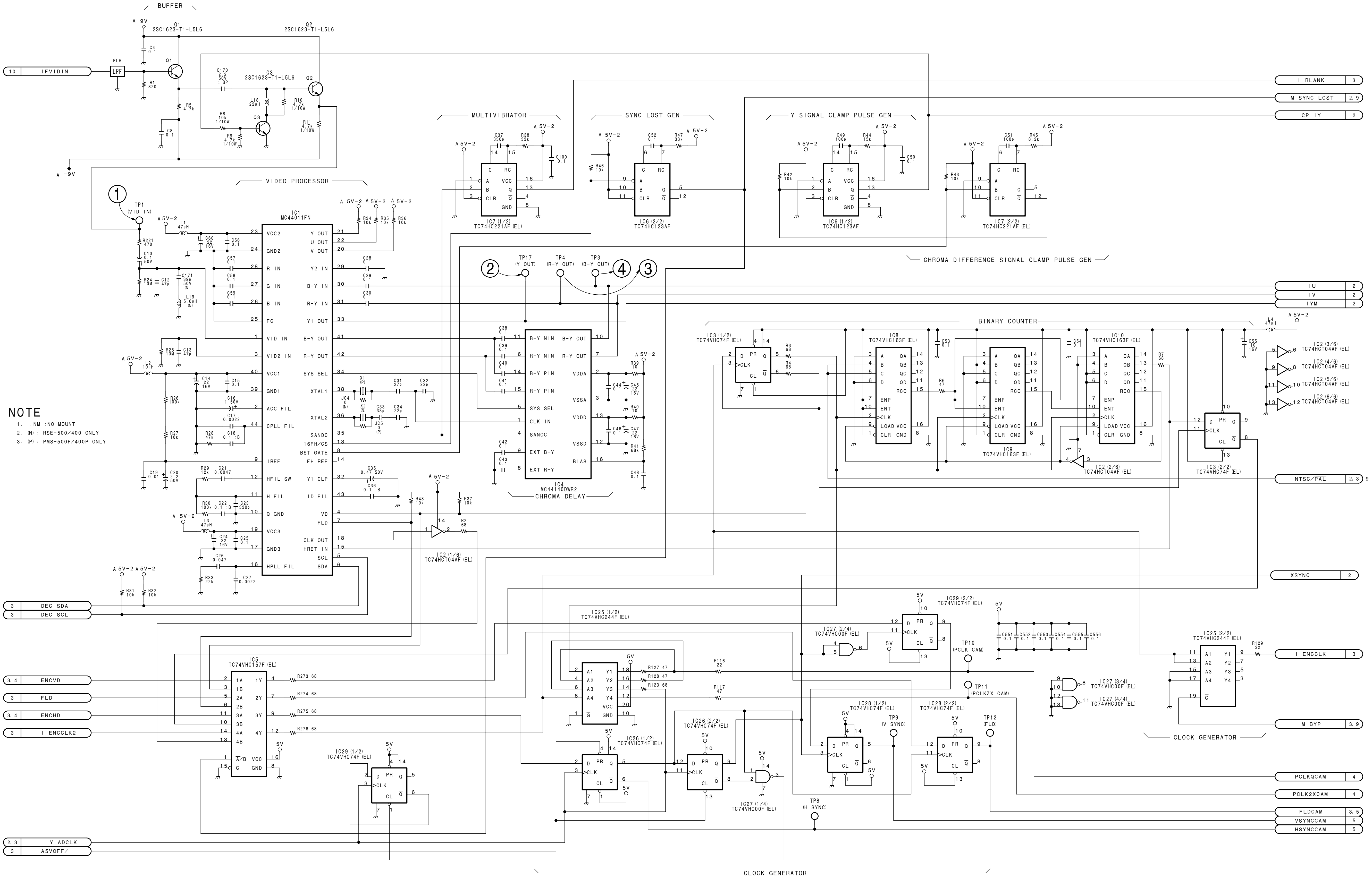
①TP901 (D-6)



Measurement Condition : VIDEO IN : COLOR BAR

DPR-86A (1/10)

DPR-86A:ISDN I/F, VIDEO AD/DA,
VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU


BUFFER
Q1 2SC1623-T1-L5L6
Q2 2SC1623-T1-L5L6
Q3 2SC1623-T1-L5L6
IFVIDIN
FL5 LPF
A 9V
A -9V
VIDEO PROCESSOR
IC1 MC44011FN
TP1 (VID IN)
TP17 (Y OUT)
TP4 (R-Y OUT)
TP3 (B-Y OUT)
MULTIVIBRATOR
IC7 (1/2) TC74HC221AF (EL)
SYNC LOST GEN
IC6 (2/2) TC74HC123AF
Y SIGNAL CLAMP PULSE GEN
IC6 (1/2) TC74HC123AF
IC7 (2/2) TC74HC221AF (EL)
CHROMA DIFFERENCE SIGNAL CLAMP PULSE GEN
IC4 MC44140DWR2
CHROMA DELAY
BINARY COUNTER
IC3 (1/2) TC74VHC74F (EL)
IC8 TC74VHC163F (EL)
IC9 TC74VHC163F (EL)
IC10 TC74VHC163F (EL)
IC2 (2/6) TC74HCT04AF (EL)
IC2 (3/6) TC74HCT04AF (EL)
IC2 (4/6) TC74HCT04AF (EL)
IC2 (5/6) TC74HCT04AF (EL)
IC2 (6/6) TC74HCT04AF (EL)
IC3 (2/2) TC74VHC74F (EL)
IC2 (1/6) TC74HCT04AF (EL)
IC5 TC74VHC157F (EL)
IC25 (1/2) TC74VHC244F (EL)
IC25 (2/2) TC74VHC244F (EL)
IC26 (1/2) TC74VHC74F (EL)
IC26 (2/2) TC74VHC74F (EL)
IC27 (1/4) TC74VHC00F (EL)
IC27 (2/4) TC74VHC00F (EL)
IC27 (3/4) TC74VHC00F (EL)
IC27 (4/4) TC74VHC00F (EL)
IC28 (1/2) TC74VHC74F (EL)
IC28 (2/2) TC74VHC74F (EL)
IC29 (1/2) TC74VHC74F (EL)
IC29 (2/2) TC74VHC74F (EL)
TP8 (H SYNC)
TP9 (V SYNC)
TP10 (PCLK CAM)
TP11 (PCLKZX CAM)
TP12 (FLD)
CLOCK GENERATOR
CLOCK GENERATOR
I BLANK 3
M SYNC LOST 2.9
CP IY 2
IU 2
IV 2
IYM 2
NTSC/PAL 2.3 9
XSYNC 2
I ENCCLK 3
M BYP 3.9
PCLKQCAM 4
PCLK2XCAM 4
FLDCAM 3.5
VSYNCCAM 5
HSYNCCAM 5
DEC SDA 3
DEC SCL 3
ENCVD 3.4
FLD 3
ENCHD 3.4
I ENCCLK2 3
Y ADCLK 2.3
A5VOFF/ 3
A 5V-2
5V
A B C D E F G H
1 2 3 4 5

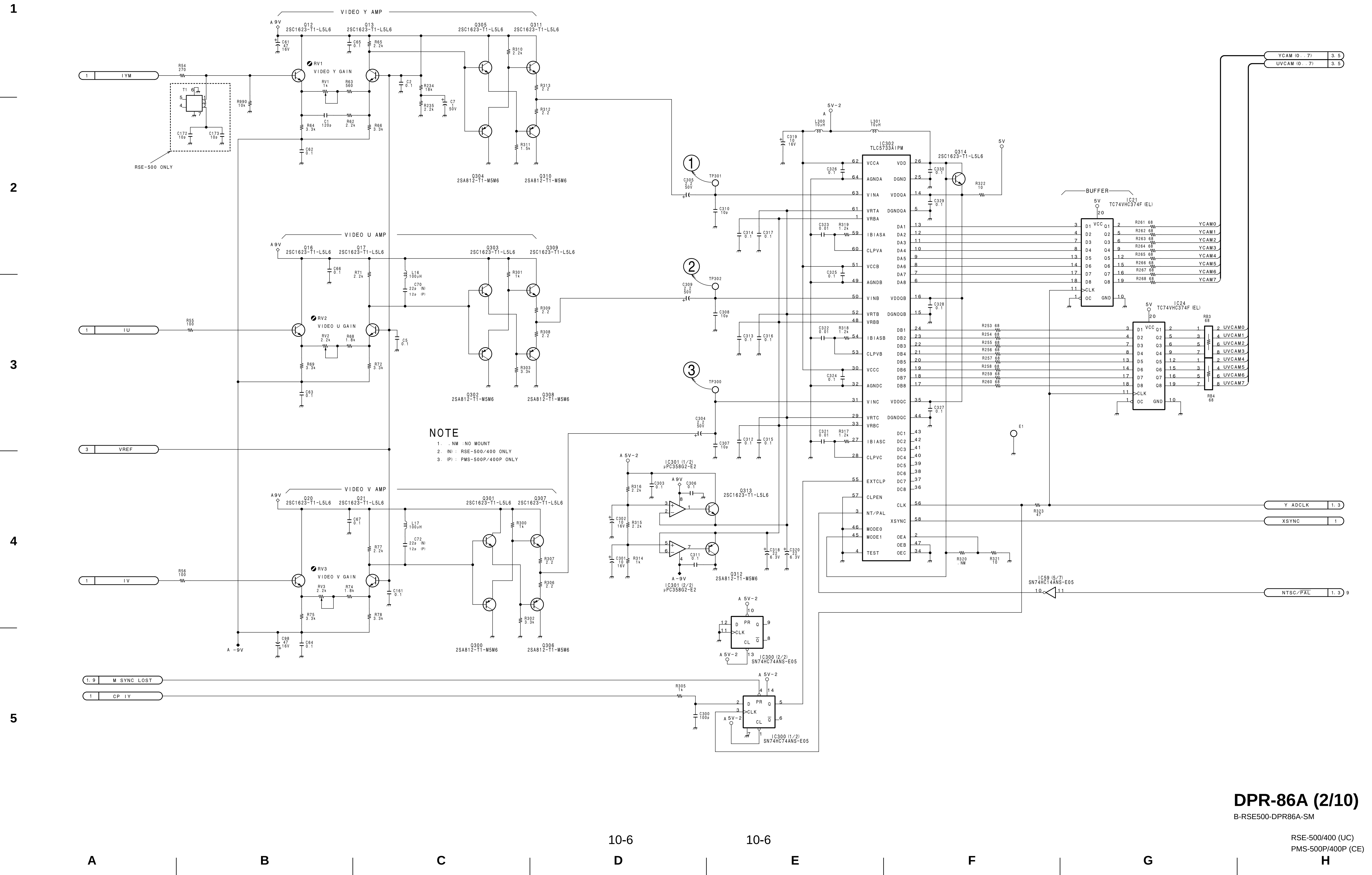
NOTE
1. .NM :NO MOUNT
2. (N) : RSE-500/400 ONLY
3. (P) : PMS-500P/400P ONLY

DPR-86A (1/10)

B-RSE500-DPR86A-SM

10-5

DPR-86A:ISDN I/F, VIDEO AD/DA,
VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU


1
2
3
4
5
A
B
C
D
E
F
G
H
VIDEO Y AMP
VIDEO U AMP
VIDEO V AMP
A9V
A -9V
IYM
IU
IV
VREF
M SYNC LOST
CP IY
RSE-500 ONLY
RV1 VIDEO Y GAIN
RV2 VIDEO U GAIN
RV3 VIDEO V GAIN
Q12 2SC1623-T1-L5L6
Q13 2SC1623-T1-L5L6
Q305 2SC1623-T1-L5L6
Q311 2SC1623-T1-L5L6
Q304 2SA812-T1-M5M6
Q310 2SA812-T1-M5M6
Q16 2SC1623-T1-L5L6
Q17 2SC1623-T1-L5L6
Q303 2SC1623-T1-L5L6
Q309 2SC1623-T1-L5L6
Q302 2SA812-T1-M5M6
Q308 2SA812-T1-M5M6
Q20 2SC1623-T1-L5L6
Q21 2SC1623-T1-L5L6
Q301 2SC1623-T1-L5L6
Q307 2SC1623-T1-L5L6
Q300 2SA812-T1-M5M6
Q306 2SA812-T1-M5M6
Q313 2SC1623-T1-L5L6
Q312 2SA812-T1-M5M6
Q314 2SC1623-T1-L5L6
IC301 (1/2) μPC358G2-E2
IC301 (2/2) μPC358G2-E2
IC302 TLC5733AIPM
IC21 TC74VHC374F (EL)
IC24 TC74VHC374F (EL)
BUFFER
IC59 (5/7) SN74HC14ANS-E05
IC300 (1/2) SN74HC74ANS-E05
IC300 (2/2) SN74HC74ANS-E05
TP301
TP302
TP300
①
②
③
5V-2
A 5V-2
5V
L300 10μH
L301 10μH
VCCA
AGNDA
VINA
VRTA
VRBA
IBIASA
CLPVA
VCCB
AGNDB
VINB
VRTB
VRBB
IBIASB
CLPVB
VCCC
AGNDC
VINC
VRTC
VRBC
IBIASC
CLPVC
EXTCLP
CLPEN
NT/PAL
MODE0
MODE1
TEST
VDD
DGND
VDDDA
DGNDDA
DA1
DA2
DA3
DA4
DA5
DA6
DA7
DA8
VDDDB
DGNDDB
DB1
DB2
DB3
DB4
DB5
DB6
DB7
DB8
VDDDC
DGNDDC
DC1
DC2
DC3
DC4
DC5
DC6
DC7
DC8
CLK
XSYNC
OEA
OEB
OEC
YCAM0
YCAM1
YCAM2
YCAM3
YCAM4
YCAM5
YCAM6
YCAM7
UVCAM0
UVCAM1
UVCAM2
UVCAM3
UVCAM4
UVCAM5
UVCAM6
UVCAM7
YCAM (0..7) 3.5
UVCAM (0..7) 3.5
Y ADCLK 1.3
XSYNC 1
NTSC/PAL 1.3 9
1.9 M SYNC LOST
1 CP IY
R83 68
R84 68
E1

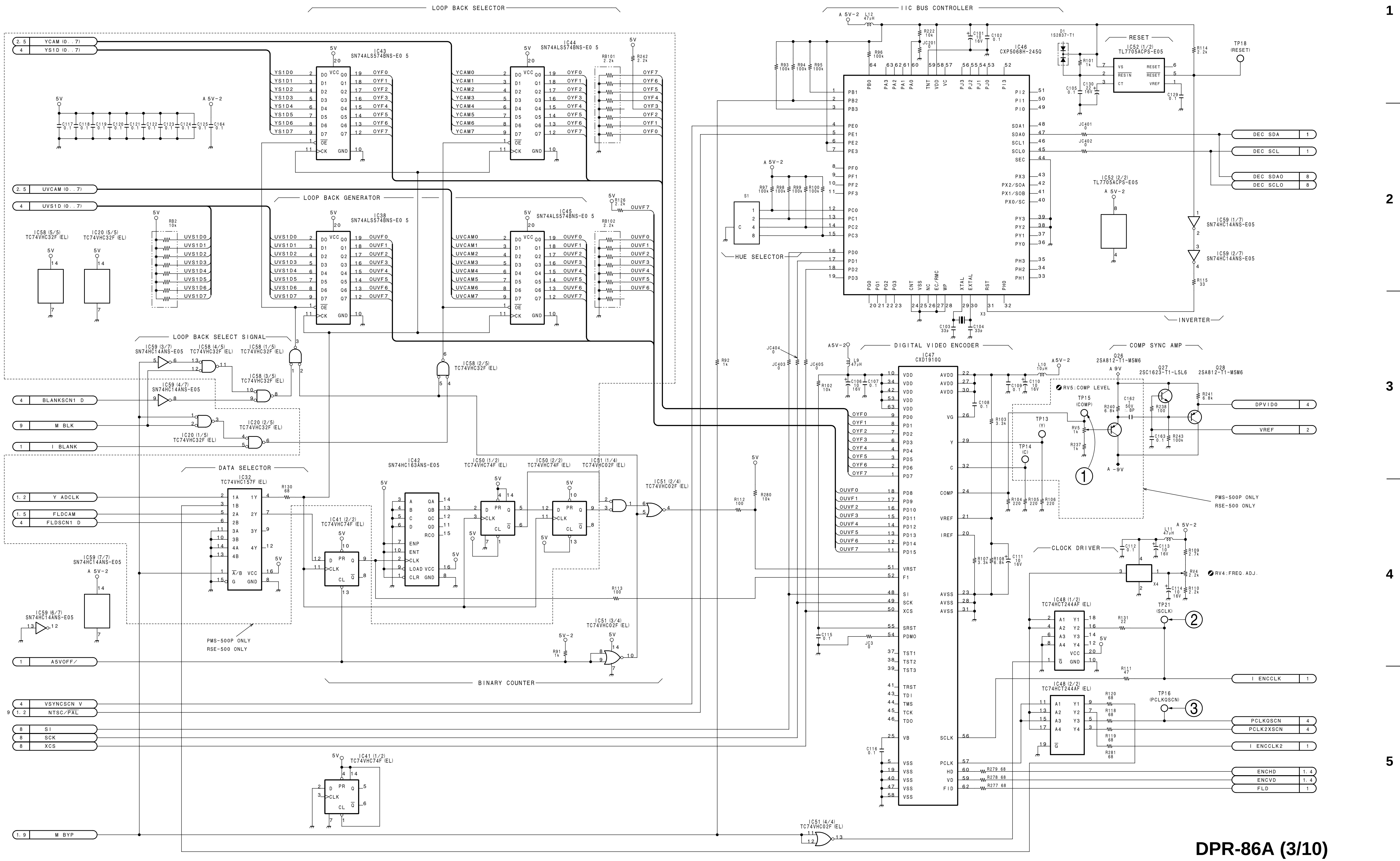
NOTE
1. NM : NO MOUNT
2. (N) : RSE-500/400 ONLY
3. (P) : PMS-500P/400P ONLY

DPR-86A (2/10)

B-RSE500-DPR86A-SM

RSE-500/400 (UC)
PMS-500P/400P (CE)

DPR-86A:ISDN I/F, VIDEO AD/DA,
VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU


LOOP BACK SELECTOR
IC43 SN74ALS574BNS-E05
IC44 SN74ALS574BNS-E05
LOOP BACK GENERATOR
IC38 SN74ALS574BNS-E05
IC45 SN74ALS574BNS-E05
YCAM (0 . . 7)
YS1D (0 . . 7)
UVCAM (0 . . 7)
UVS1D (0 . . 7)
LOOP BACK SELECT SIGNAL
IC58 (5/5) TC74VHC32F (EL)
IC20 (5/5) TC74VHC32F (EL)
IC59 (3/7) SN74HC14ANS-E05
IC58 (4/5) TC74VHC32F (EL)
IC58 (1/5) TC74VHC32F (EL)
IC58 (3/5) TC74VHC32F (EL)
IC58 (2/5) TC74VHC32F (EL)
IC59 (4/7) SN74HC14ANS-E05
IC20 (2/5) TC74VHC32F (EL)
IC20 (1/5) TC74VHC32F (EL)
BLANKSCN1 D
M BLK
I BLANK
DATA SELECTOR
IC32 TC74VHC157F (EL)
Y ADCLK
FLDCAM
FLDSCN1 D
IC59 (7/7) SN74HC14ANS-E05
IC59 (6/7) SN74HC14ANS-E05
IC41 (2/2) TC74VHC74F (EL)
IC42 SN74HC163ANS-E05
IC50 (1/2) TC74VHC74F (EL)
IC50 (2/2) TC74VHC74F (EL)
IC51 (1/4) TC74VHC02F (EL)
IC51 (2/4) TC74VHC02F (EL)
IC51 (3/4) TC74VHC02F (EL)
PMS-500P ONLY
RSE-500 ONLY
BINARY COUNTER
A5VOFF/
VSYNCSCN V
NTSC/PAL
SI
SCK
XCS
IC41 (1/2) TC74VHC74F (EL)
M BYP
IC51 (4/4) TC74VHC02F (EL)
IIC BUS CONTROLLER
IC46 CXP5068H-245Q
D1 1SS837-T1
RESET
IC52 (1/2) TL7705ACPS-E05
TP18 (RESET)
HUE SELECTOR
S1
IC52 (2/2) TL7705ACPS-E05
IC59 (1/7) SN74HC14ANS-E05
IC59 (2/7) SN74HC14ANS-E05
INVERTER
DEC SDA
DEC SCL
DEC SDAO
DEC SCLO
DIGITAL VIDEO ENCODER
IC47 CXD1910Q
COMP SYNC AMP
Q26 2SA812-T1-M5M6
Q27 2SC1623-T1-L5L6
Q28 2SA812-T1-M5M6
RV5:COMP LEVEL
TP15 (COMP)
TP13 (Y)
TP14 (C)
OPVIDO
VREF
PMS-500P ONLY
RSE-500 ONLY
CLOCK DRIVER
RV4:FREQ. ADJ.
X4
IC48 (1/2) TC74HCT244AF (EL)
IC48 (2/2) TC74HCT244AF (EL)
TP21 (SCLK)
TP16 (PCLKQSCN)
I ENCCLK
PCLKQSCN
PCLK2XSCN
I ENCCLK2
ENCHD
ENCVD
FLD
①
②
③
1
2
3
4
5

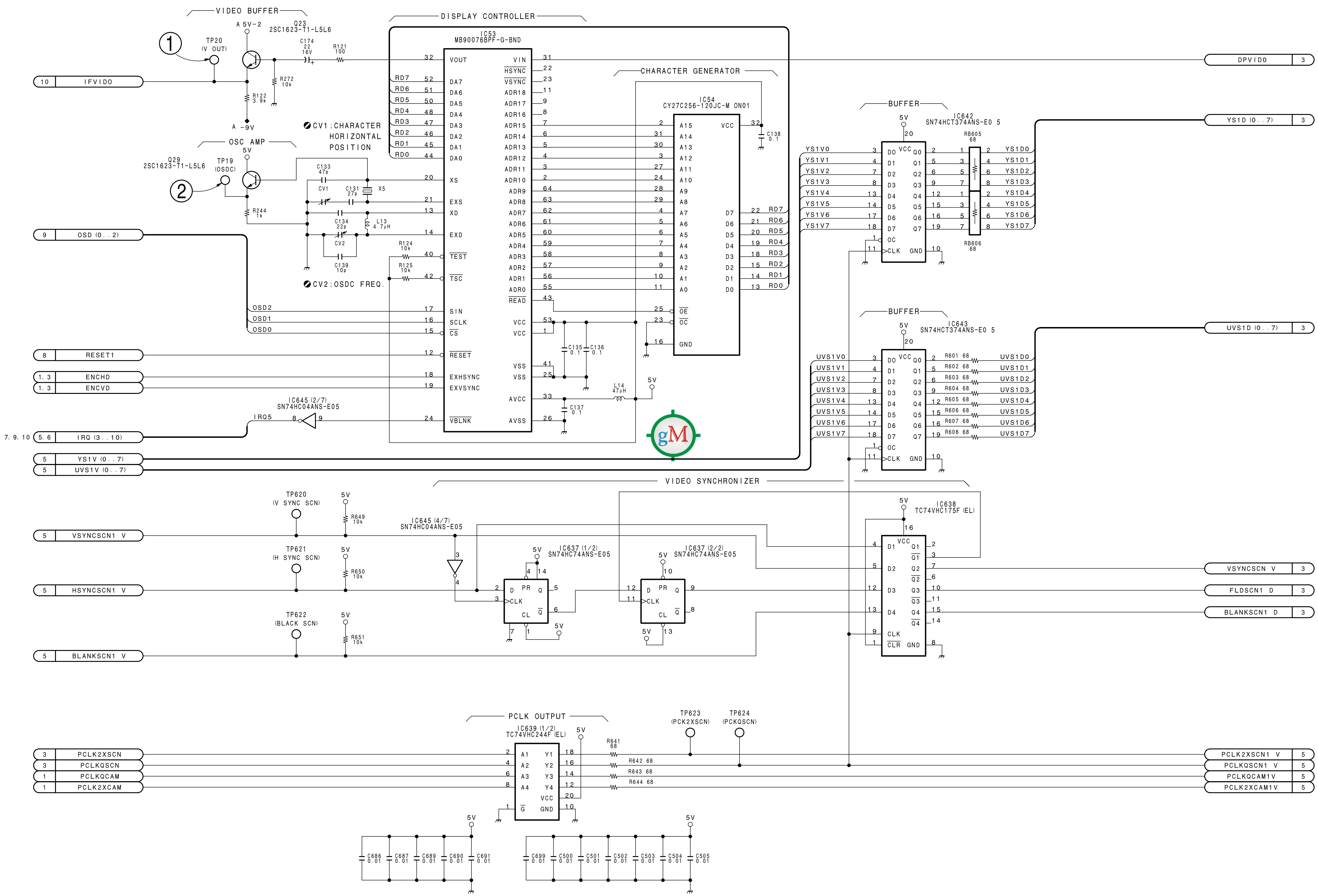
DPR-86A (3/10)

B-RSE500-DPR86A-SM

RSE-500/400 (UC)
PMS-500P/400P (CE)

A B C D E F G H

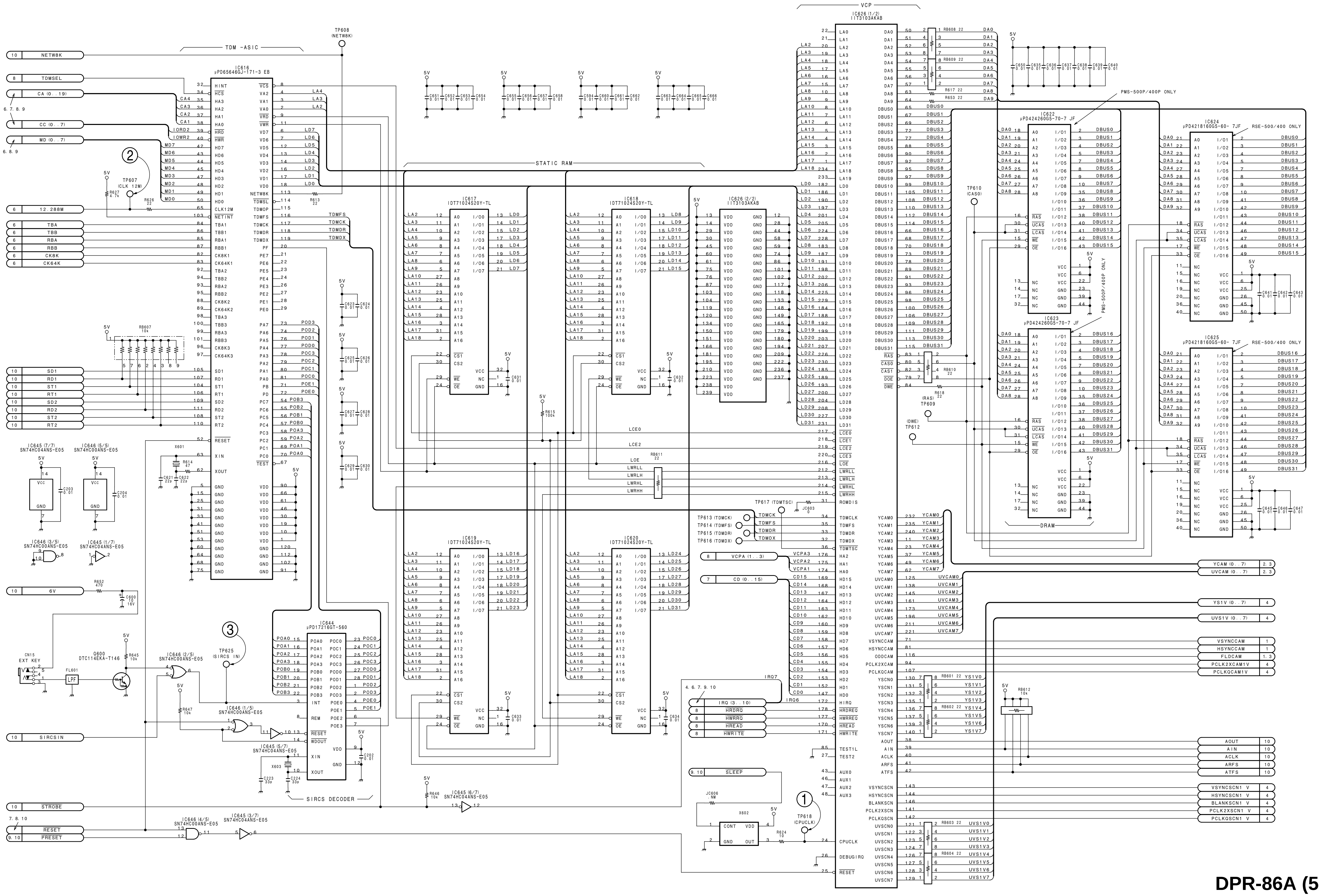
DPR-86A:ISDN I/F, VIDEO AD/DA,
VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU


VIDEO BUFFER
Q23 2SC1623-T1-L5L6
TP20 (V OUT)
IFVIDO
OSC AMP
Q29 2SC1623-T1-L5L6
TP19 (OSDC)
CV1:CHARACTER HORIZONTAL POSITION
CV2:OSDC FREQ.
DISPLAY CONTROLLER
IC53 MB90076BPF-G-BND
CHARACTER GENERATOR
IC54 CY27C256-120JC-M ON01
OSD (0..2)
RESET1
ENCHD
ENCVD
IC645 (2/7) SN74HC04ANS-E05
IRQ (3..10)
YS1V (0..7)
UVS1V (0..7)
DPVIDO
BUFFER
IC642 SN74HCT374ANS-E0 5
YS1D (0..7)
BUFFER
IC643 SN74HCT374ANS-E0 5
UVS1D (0..7)
VIDEO SYNCHRONIZER
TP620 (V SYNC SCN)
TP621 (H SYNC SCN)
TP622 (BLACK SCN)
VSYNCSCN1 V
HSYNCSCN1 V
BLANKSCN1 V
IC645 (4/7) SN74HC04ANS-E05
IC637 (1/2) SN74HC74ANS-E05
IC637 (2/2) SN74HC74ANS-E05
IC638 TC74VHC175F (EL)
VSYNCSCN V
FLDSCN1 D
BLANKSCN1 D
PCLK OUTPUT
IC639 (1/2) TC74VHC244F (EL)
TP623 (PCK2XSCN)
TP624 (PCKQSCN)
PCLK2XSCN
PCLKQSCN
PCLKQCAM
PCLK2XCAM
PCLK2XSCN1 V
PCLKQSCN1 V
PCLKQCAM1 V
PCLK2XCAM1 V

DPR-86A (4/10)

B-RSE500-DPR86A-SM

DPR-86A:ISDN I/F, VIDEO AD/DA,
VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU

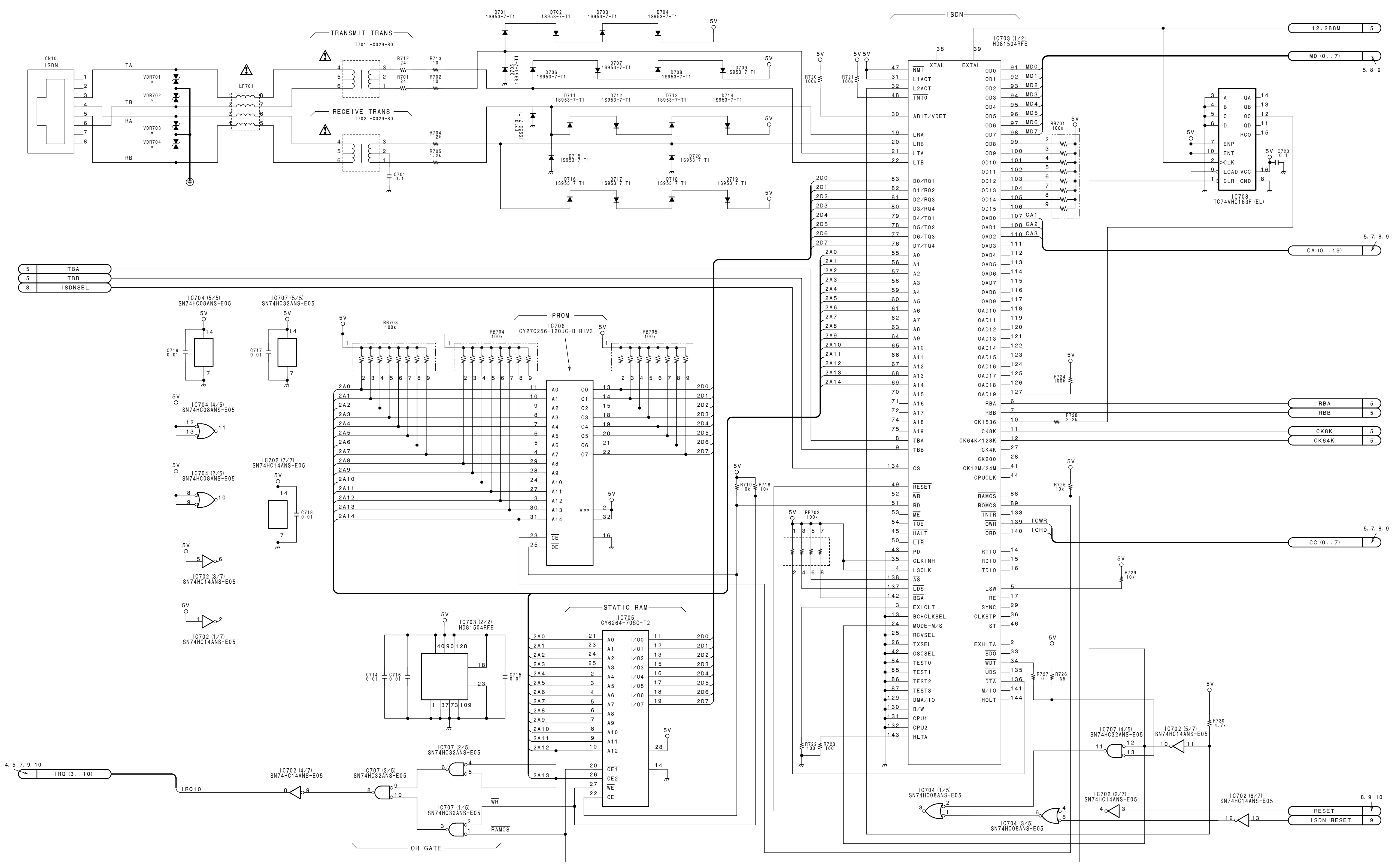

TDM -ASIC
IC616 μPD65646GJ-171-3 EB
NETW8K
TDMSEL
CA (0..19)
CC (0..7)
MD (0..7)
TP607 (CLK 12M)
TP608 (NETW8K)
12.288M
TBA
TBB
RBA
RBB
CK8K
CK64K
SD1
RD1
ST1
RT1
SD2
RD2
ST2
RT2
IC645 (7/7) SN74HC04ANS-E05
IC646 (5/5) SN74HC00ANS-E05
IC646 (3/5) SN74HC00ANS-E05
IC645 (1/7) SN74HC04ANS-E05
6V
CN15 EXT KEY
FL601
LPF
Q600 DTC114EKA-T146
IC646 (2/5) SN74HC00ANS-E05
TP625 (SIRCS IN)
IC646 (1/5) SN74HC00ANS-E05
IC645 (5/7) SN74HC04ANS-E05
IC644 μPD17216GT-560
SIRCS DECODER
SIRCSIN
STROBE
RESET
PRESET
IC646 (4/5) SN74HC00ANS-E05
IC645 (3/7) SN74HC04ANS-E05
IC645 (6/7) SN74HC04ANS-E05
STATIC RAM
IC617 IDT71024S20Y-TL
IC618 IDT71024S20Y-TL
IC619 IDT71024S20Y-TL
IC620 IDT71024S20Y-TL
IC626 (2/2) IIT3103AKAB
VCP
IC626 (1/2) IIT3103AKAB
TP617 (TDMTSC)
TP613 (TDMCK)
TP614 (TDMFS)
TP615 (TDMDR)
TP616 (TDMDX)
VCPA (1..3)
CD (0..15)
IRQ (3..10)
HRDREQ
HWRREQ
HREAD
HWRITE
SLEEP
X602
TP618 (CPUCLK)
TP610 (CAS0)
TP609 (RAS)
TP612 (DWE)
IC622 μPD424260G5-70-7 JF
IC623 μPD424260G5-70-7 JF
PMS-500P/400P ONLY
DRAM
IC624 μPD4218160G5-60-7JF
IC625 μPD4218160G5-60-7JF
RSE-500/400 ONLY
YCAM (0..7)
UVCAM (0..7)
YS1V (0..7)
UVS1V (0..7)
VSYNCCAM
HSYNCCAM
FLDCAM
PCLK2XCAM1V
PCLKQCAM1V
AOUT
AIN
ACLK
ARFS
ATFS
VSYNCSCN1 V
HSYNCSCN1 V
BLANKSCN1 V
PCLK2XSCN1 V
PCLKQSCN1 V
1
2
3
4
5
A
B
C
D
E
F
G
H

DPR-86A (5/10)

B-RSE500-DPR86A-SM

RSE-500/400 (UC)
PMS-500P/400P (CE)

DPR-86A:ISDN I/F, VIDEO AD/DA,
VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU

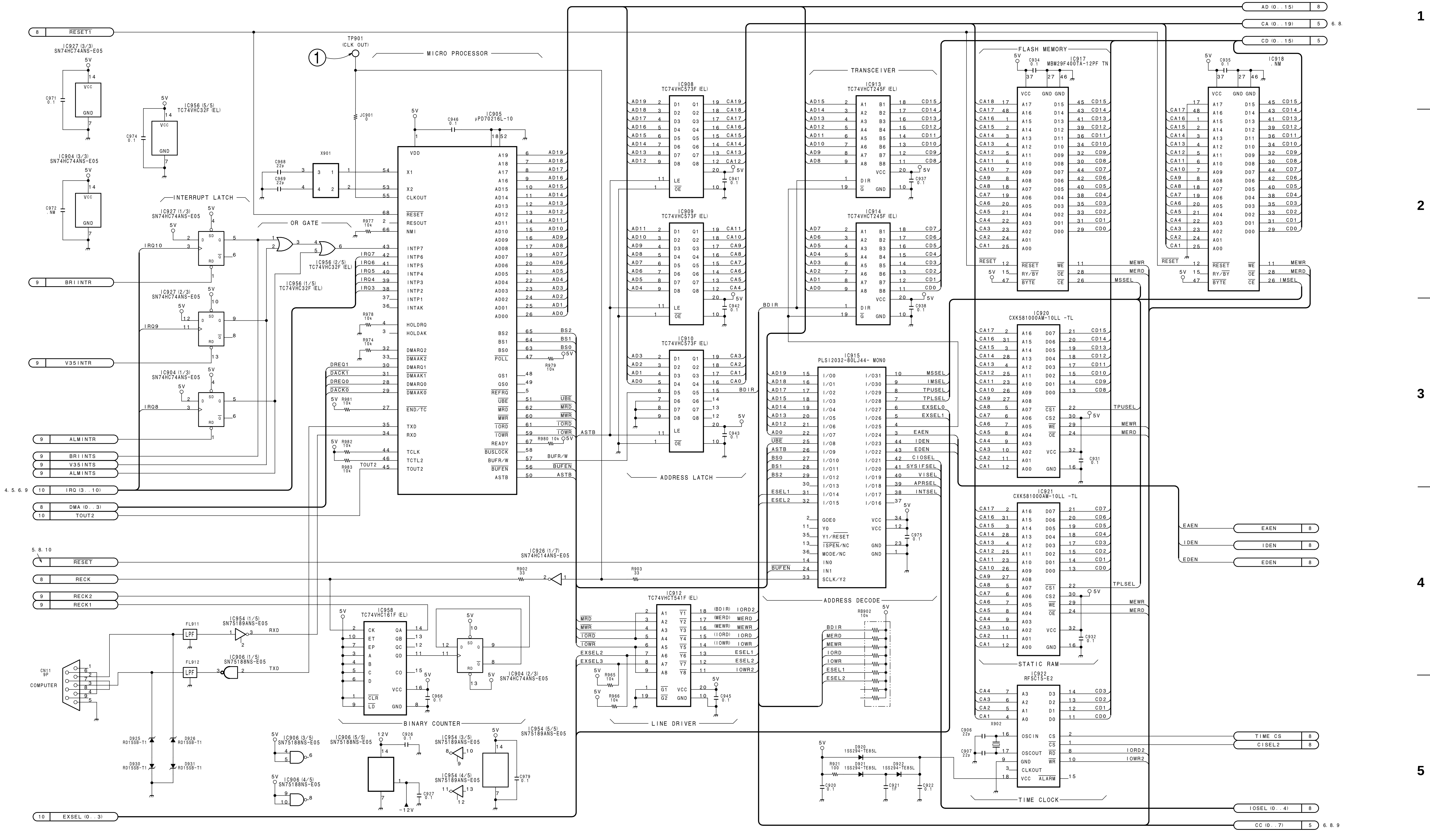

1
2
3
4
5
CN10 ISDN
TA
TB
RA
RB
VDR701
VDR702
VDR703
VDR704
LF701
TRANSMIT TRANS
T701 -X029-80
RECEIVE TRANS
T702 -X029-80
C701 0.1
D701 1S953-T-T1
D702 1S953-T-T1
D703 1S953-T-T1
D704 1S953-T-T1
ISDN
IC703 (1/2) HD81504RFE
12.288M
MD (0..7)
5.8.9
IC708 TC74VHC163F (EL)
RB701 100k
CA (0..19)
5.7.8.9
TBA
TBB
ISDNSEL
IC704 (5/5) SN74HC08ANS-E05
IC707 (5/5) SN74HC32ANS-E05
PROM
IC706 CY27C256-120JC-B RIV3
RB703 100k
RB704 100k
RB705 100k
IC704 (4/5) SN74HC08ANS-E05
IC704 (2/5) SN74HC08ANS-E05
IC702 (7/7) SN74HC14ANS-E05
IC702 (3/7) SN74HC14ANS-E05
IC702 (1/7) SN74HC14ANS-E05
RBA
RBB
CK8K
CK64K
CC (0..7)
5.7.8.9
RB702 100k
STATIC RAM
IC705 CY6264-70SC-T2
IC703 (2/2) HD81504RFE
IC707 (4/5) SN74HC32ANS-E05
IC702 (5/7) SN74HC14ANS-E05
4.5.7.9.10
IRQ (3..10)
IRQ10
IC702 (4/7) SN74HC14ANS-E05
IC707 (3/5) SN74HC32ANS-E05
IC707 (2/5) SN74HC32ANS-E05
IC707 (1/5) SN74HC32ANS-E05
WR
RAMCS
OR GATE
IC704 (1/5) SN74HC08ANS-E05
IC704 (3/5) SN74HC08ANS-E05
IC702 (2/7) SN74HC14ANS-E05
IC702 (6/7) SN74HC14ANS-E05
8.9.10
RESET
ISDN RESET

DPR-86A (6/10)

B-RSE500-DPR86A-SM

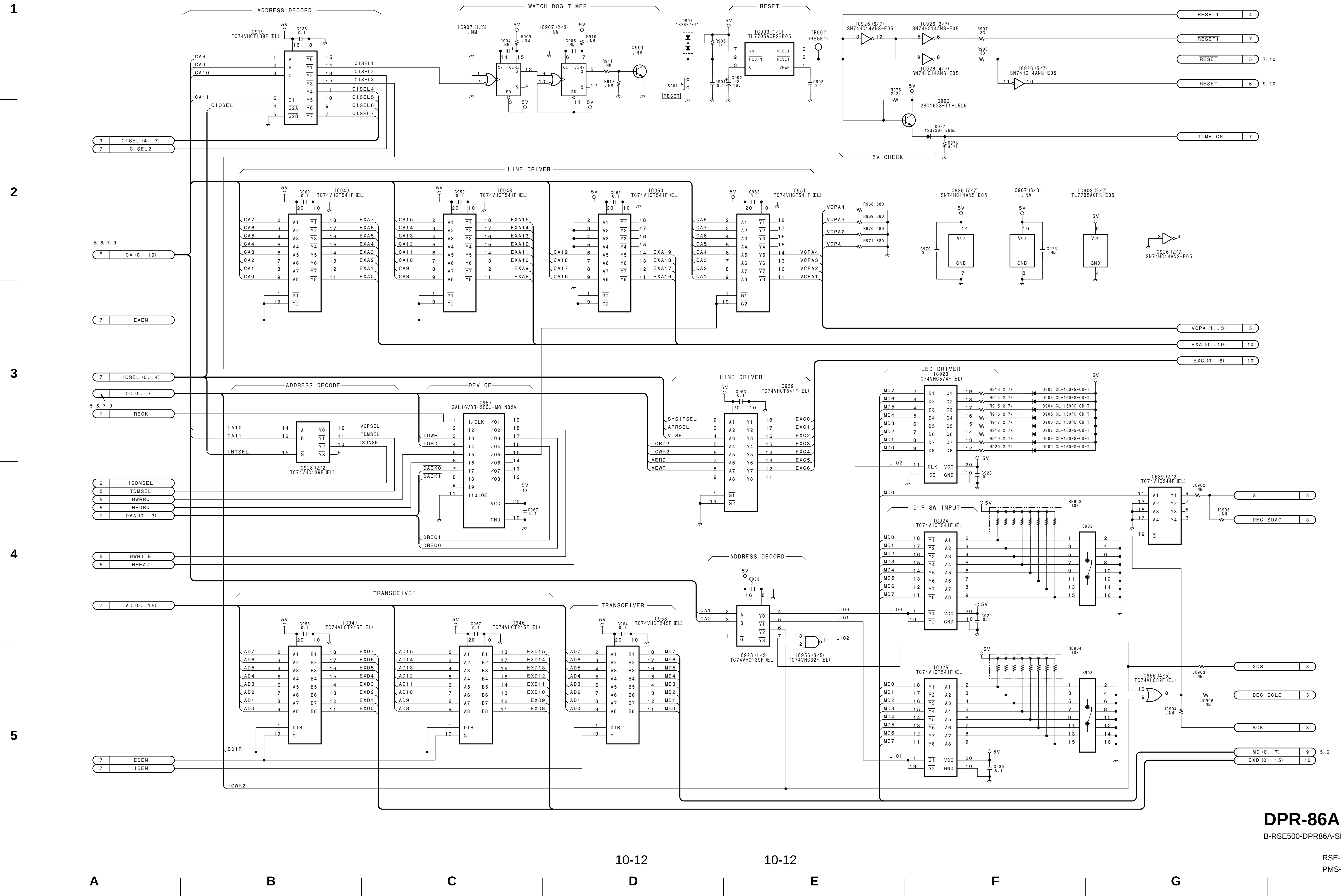
RSE-500/400 (UC)
PMS-500P/400P (CE)

DPR-86A:ISDN I/F, VIDEO AD/DA,
VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU


MICRO PROCESSOR
IC905 μPD70216L-10
TP901 (CLK OUT)
X901
INTERRUPT LATCH
IC927 (1/3) SN74HC74ANS-E05
IC927 (2/3) SN74HC74ANS-E05
IC927 (3/3) SN74HC74ANS-E05
IC904 (1/3) SN74HC74ANS-E05
IC904 (2/3) SN74HC74ANS-E05
IC904 (3/3) SN74HC74ANS-E05
OR GATE
IC956 (1/5) TC74VHC32F (EL)
IC956 (2/5) TC74VHC32F (EL)
IC956 (5/5) TC74VHC32F (EL)
IC908 TC74VHC573F (EL)
IC909 TC74VHC573F (EL)
IC910 TC74VHC573F (EL)
ADDRESS LATCH
TRANSCEIVER
IC913 TC74VHCT245F (EL)
IC914 TC74VHCT245F (EL)
IC915 PLSI2032-80LJ44- MONO
ADDRESS DECODE
FLASH MEMORY
IC917 MBM29F400TA-12PF TN
IC918 NM
IC920 CXK581000AM-10LL -TL
IC921 CXK581000AM-10LL -TL
STATIC RAM
IC922 RF5C15-E2
X902
TIME CLOCK
IC912 TC74VHCT541F (EL)
LINE DRIVER
IC958 TC74VHC161F (EL)
BINARY COUNTER
IC926 (1/7) SN74HC14ANS-E05
IC954 (1/5) SN75188NS-E05
IC954 (3/5) SN75188NS-E05
IC954 (4/5) SN75189ANS-E05
IC954 (5/5) SN75189ANS-E05
IC906 (1/5) SN75189ANS-E05
IC906 (3/5) SN75188NS-E05
IC906 (4/5) SN75188NS-E05
IC906 (5/5) SN75188NS-E05
FL911 LPF
FL912 LPF
CN11 9P COMPUTER
D925 RD15SB-T1
D926 RD15SB-T1
D930 RD15SB-T1
D931 RD15SB-T1
D920 1SS294-TE85L
D921 1SS294-TE85L
D922 1SS294-TE85L
RB902 10k
RESET1
BRIINTR
V35INTR
ALMINTR
BRIINTS
V35INTS
ALMINTS
IRQ (3..10)
DMA (0..3)
TOUT2
RESET
RECK
RECK2
RECK1
EXSEL (0..3)
AD (0..15)
CA (0..19)
CD (0..15)
EAEN
IDEN
EDEN
TIME CS
CISEL2
IOSEL (0..4)
CC (0..7)
4. 5. 6. 9
5. 8. 10
6. 8.
6. 8. 9
A
B
C
D
E
F
G
H
1
2
3
4
5

DPR-86A (7/10)

DPR-86A:ISDN I/F, VIDEO AD/DA,
VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU

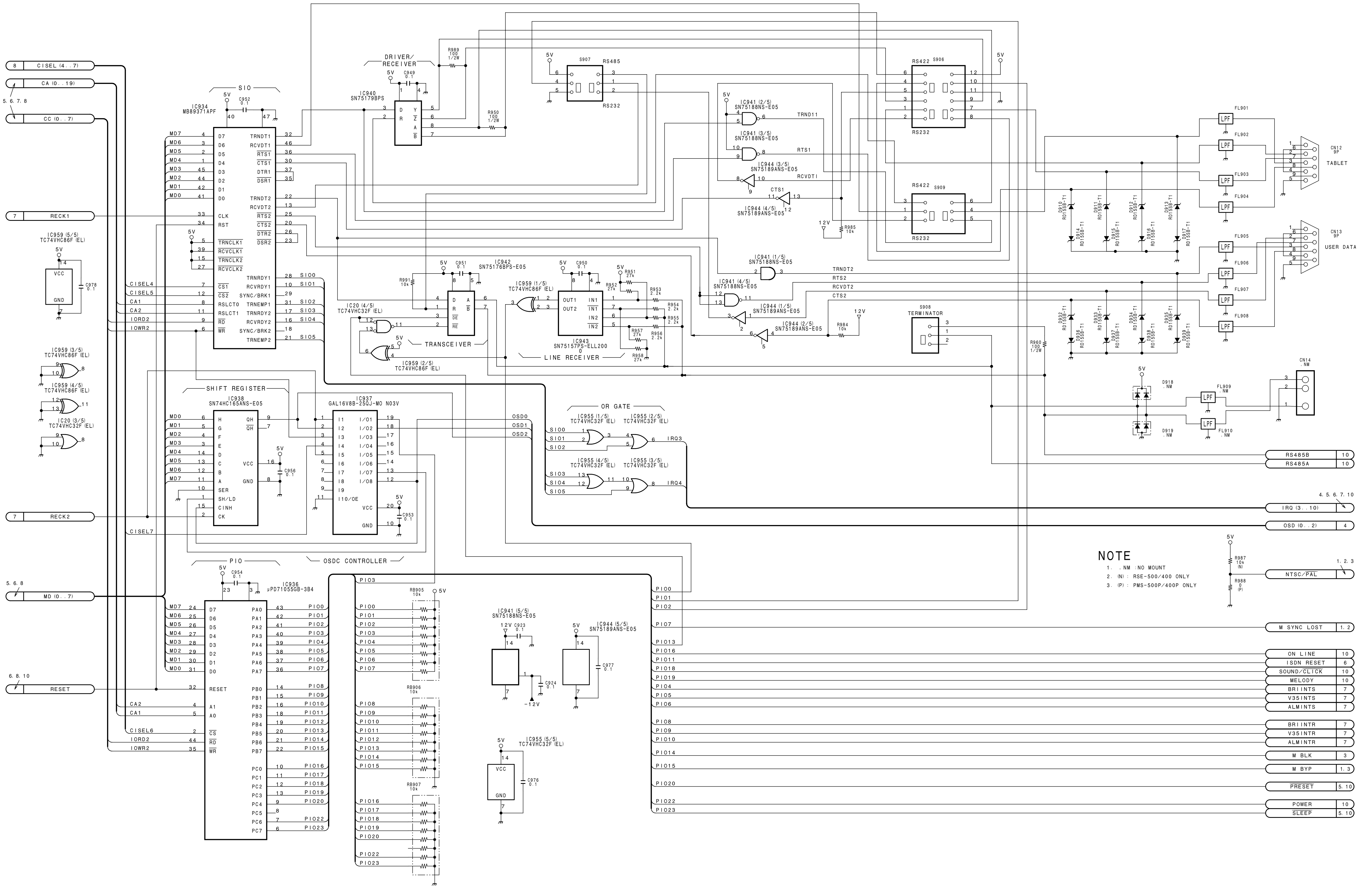

1
2
3
4
5
ADDRESS DECORD
IC919 TC74VHCT138F (EL)
WATCH DOG TIMER
IC907 (1/3) .NM
IC907 (2/3) .NM
Q901 .NM
RESET
D901 1SS837-T1
S901
RESET
IC903 (1/2) TL7705ACPS-E05
TP902 (RESET)
IC926 (6/7) SN74HC14ANS-E05
IC926 (3/7) SN74HC14ANS-E05
IC926 (4/7) SN74HC14ANS-E05
IC926 (5/7) SN74HC14ANS-E05
Q902 2SC1623-T1-L5L6
D927 1SS226-TE85L
5V CHECK
RESET1
RESET
TIME CS
CISEL (4..7)
CISEL2
LINE DRIVER
IC949 TC74VHCT541F (EL)
IC948 TC74VHCT541F (EL)
IC950 TC74VHCT541F (EL)
IC951 TC74VHCT541F (EL)
IC926 (7/7) SN74HC14ANS-E05
IC907 (3/3) .NM
IC903 (2/2) TL7705ACPS-E05
IC926 (2/7) SN74HC14ANS-E05
CA (0..19)
EAEN
VCPA (1..3)
EXA (0..19)
EXC (0..6)
IOSEL (0..4)
CC (0..7)
RECK
ADDRESS DECODE
DEVICE
IC957 GAL16V8B-25QJ-M0 N02V
IC928 (2/2) TC74VHC139F (EL)
LINE DRIVER
IC939 TC74VHCT541F (EL)
LED DRIVER
IC923 TC74VHC574F (EL)
D902–D909 CL-150PG-CD-T
ISDNSEL
TDMSEL
HWRRQ
HRDRQ
DMA (0..3)
DIP SW INPUT
IC924 TC74VHCT541F (EL)
RB903 10k
S902
IC639 (2/2) TC74VHC244F (EL)
SI
DEC SDAO
HWRITE
HREAD
ADDRESS DECORD
IC928 (1/2) TC74VHC139F (EL)
IC956 (3/5) TC74VHC32F (EL)
TRANSCEIVER
IC947 TC74VHCT245F (EL)
IC946 TC74VHCT245F (EL)
TRANSCEIVER
IC953 TC74VHCT245F (EL)
AD (0..15)
IC925 TC74VHCT541F (EL)
RB904 10k
S903
IC956 (4/5) TC74VHC32F (EL)
XCS
DEC SCLO
SCK
MD (0..7)
EXD (0..15)
EDEN
IDEN
A
B
C
D
E
F
G
H

DPR-86A (8/10)

B-RSE500-DPR86A-SM

RSE-500/400 (UC)
PMS-500P/400P (CE)

DPR-86A:ISDN I/F, VIDEO AD/DA,
VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU


CISEL (4..7)
CA (0..19)
CC (0..7)
RECK1
RECK2
MD (0..7)
RESET
5.6.7.8
5.6.8
6.8.10
SIO
IC934 MB89371APF
IC938 SN74HC165ANS-E05
SHIFT REGISTER
IC937 GAL16V8B-25QJ-M0 N03V
OSDC CONTROLLER
PIO
IC936 μPD71055GB-3B4
DRIVER/RECEIVER
IC940 SN75179BPS
IC942 SN75176BPS-E05
TRANSCEIVER
IC943 SN75157PS-ELL2000
LINE RECEIVER
IC959 TC74VHC86F (EL)
IC20 TC74VHC32F (EL)
OR GATE
IC955 TC74VHC32F (EL)
IC941 SN75188NS-E05
IC944 SN75189ANS-E05
S907 RS485 RS232
S906 RS422 RS232
S909 RS422 RS232
S908 TERMINATOR
CN12 9P TABLET
CN13 9P USER DATA
CN14 NM
FL901 FL902 FL903 FL904 FL905 FL906 FL907 FL908
FL909 NM
FL910 NM
LPF
RD15SB-T1
TRND11 RTS1 RCVDT1 CTS1
TRNDT2 RTS2 RCVDT2 CTS2
OSD0 OSD1 OSD2
IRQ3 IRQ4
RS485B 10
RS485A 10
IRQ (3..10)
4.5.6.7.10
OSD (0..2) 4
NTSC/PAL
1.2.3
R987 10k (N)
R988 0 (P)
M SYNC LOST 1.2
ON LINE 10
ISDN RESET 6
SOUND/CLICK 10
MELODY 10
BRIINTS 7
V35INTS 7
ALMINTS 7
BRIINTR 7
V35INTR 7
ALMINTR 7
M BLK 3
M BYP 1.3
PRESET 5.10
POWER 10
SLEEP 5.10
RB905 10k
RB906 10k
RB907 10k

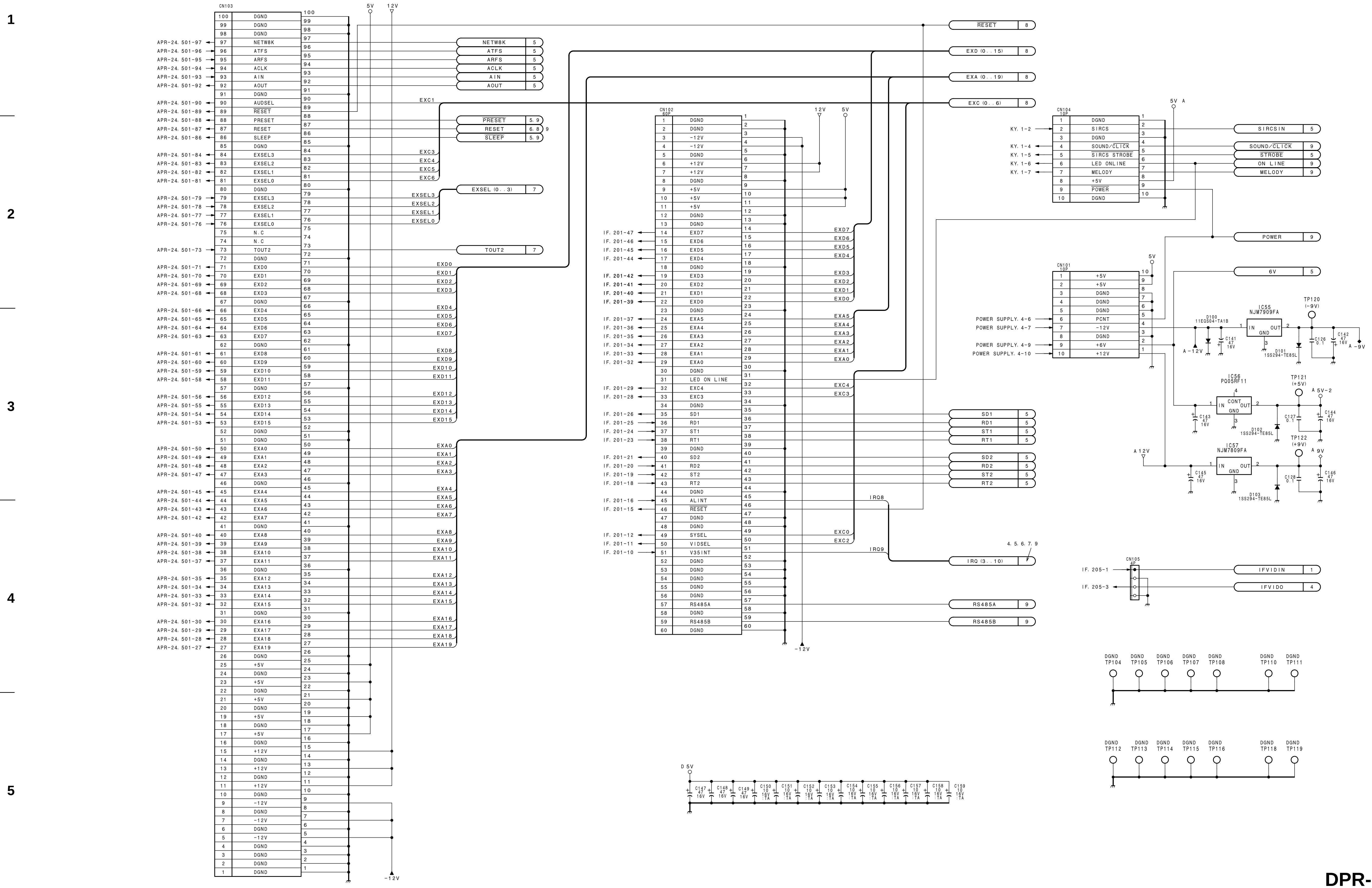
NOTE
1. . NM : NO MOUNT
2. (N) : RSE-500/400 ONLY
3. (P) : PMS-500P/400P ONLY

DPR-86A (9/10)

B-RSE500-DPR86A-SM

DPR-86A (10/10)

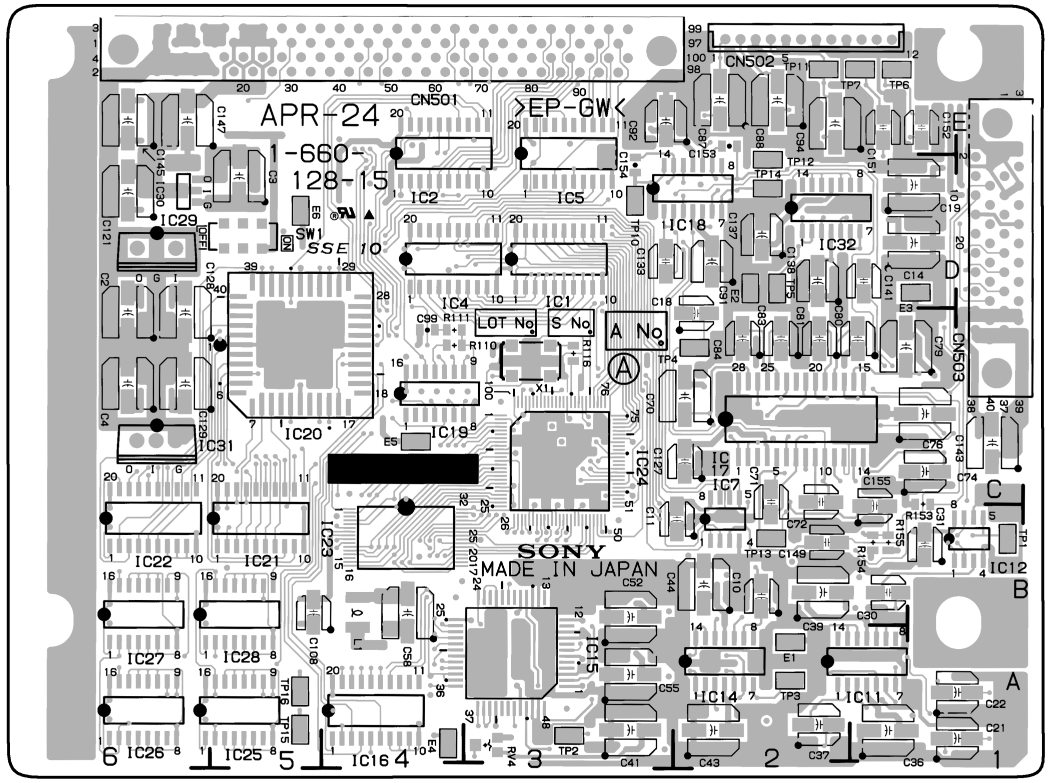
DPR-86A:ISDN I/F, VIDEO AD/DA,
VIDEO COMPRESS/DECOMPRESS, SYSTEM CPU


CN103
CN102 60P
CN104 10P
CN101 10P
CN105 4P
5V
12V
-12V
RESET
EXD (0..15)
EXA (0..19)
EXC (0..6)
EXC1
NETW8K
ATFS
ARFS
ACLK
AIN
AOUT
PRESET
SLEEP
EXSEL (0..3)
TOUT2
SIRCSIN
SOUND/CLICK
STROBE
ON LINE
MELODY
POWER
6V
IC55 NJM7909FA
IC56 PQ05RF11
IC57 NJM7809FA
D100 11EQS04-TA1B
D101 1SS294-TE85L
D102 1SS294-TE85L
D103 1SS294-TE85L
TP120 (-9V)
TP121 (+5V)
TP122 (+9V)
A-12V
A-9V
A5V-2
A12V
A9V
SD1
RD1
ST1
RT1
SD2
RD2
ST2
RT2
IRQ8
IRQ9
IRQ (3..10)
4.5.6.7.9
RS485A
RS485B
IFVIDIN
IFVIDO
IF.205-1
IF.205-3
KY.1-2
KY.1-4
KY.1-5
KY.1-6
KY.1-7
POWER SUPPLY.4-6
POWER SUPPLY.4-7
POWER SUPPLY.4-9
POWER SUPPLY.4-10
DGND TP104
DGND TP105
DGND TP106
DGND TP107
DGND TP108
DGND TP110
DGND TP111
DGND TP112
DGND TP113
DGND TP114
DGND TP115
DGND TP116
DGND TP118
DGND TP119
D5V
C147 47 16V
C148 47 16V
C149 47 16V
C150 10 16V TA
C151 10 16V TA
C152 10 16V TA
C153 10 16V TA
C154 10 16V TA
C155 10 16V TA
C156 10 16V TA
C157 10 16V TA
C158 10 16V TA
C159 10 16V TA
1
2
3
4
5
A
B
C
D
E
F
G
H

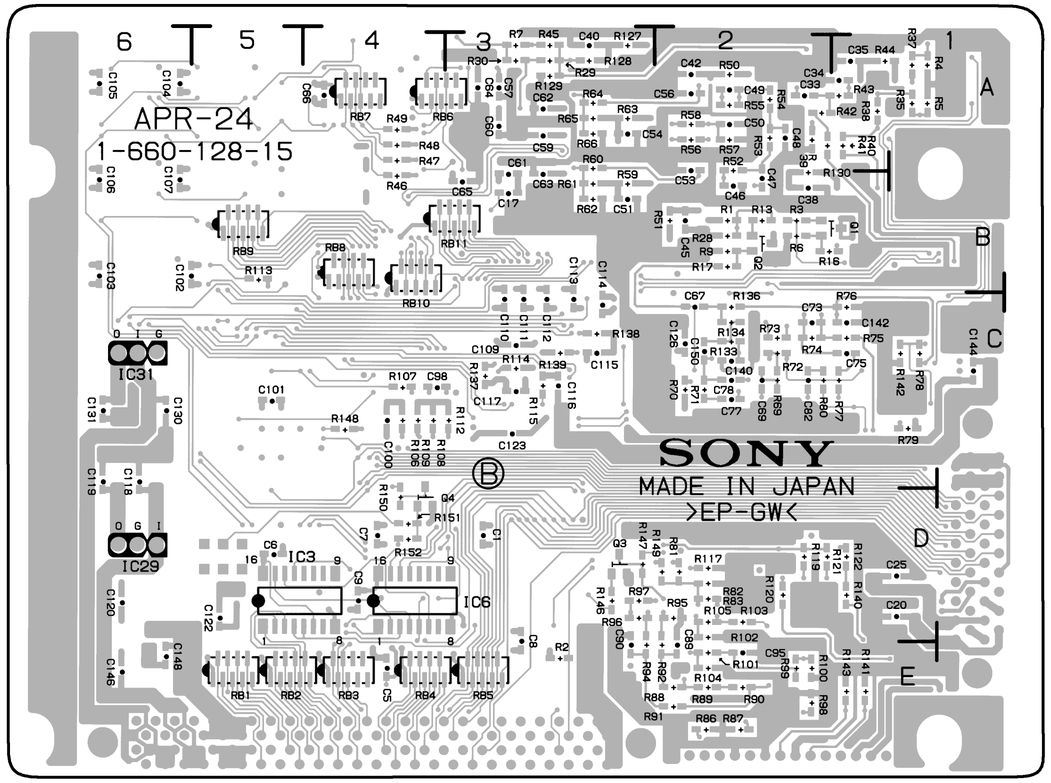
DPR-86A (10/10)

B-RSE500-DPR86A-SM

10-14


APR-24
1-660-
128-15
>EP-GW<
CN501
CN502
CN503
SONY
MADE IN JAPAN
LOT No.
S No.
A No.

APR-24 **-A SIDE-**
1-660-128-15


APR-24
1-660-128-15
SONY
MADE IN JAPAN
>EP-GW<
IC31
IC29
IC3
IC6

APR-24 **-B SIDE-**
1-660-128-15

*: B SIDE

CN501	E6
CN502	E2
CN503	D1
E1	A2
E2	D2
E3	D1
E4	A4
E5	C4
E6	D5
IC1	D3
IC2	D4
*IC3	D5
IC4	D4
IC5	D3
*IC6	D4
IC7	B2
IC11	A1
IC12	B1
IC14	A2
IC15	A3
IC16	A4
IC17	C2
IC18	D2
IC19	C4
IC20	C5
IC21	B5
IC22	B6
IC24	C3
IC25	A5
IC26	A6
IC27	B6
IC28	B5
IC29	D6
IC30	D6
IC31	C6
IC32	D2
L1	B4
*Q1	B2
*Q2	B2
*Q3	D3
*Q4	D4
*RB1	E5
*RB2	E5
*RB3	E4
*RB4	E4
*RB5	E3
*RB6	A4
*RB7	A4
*RB10	B4
*RB11	B3
RV4	A3
SW1	D5
TP1	B1
TP2	A3
TP3	A2
TP4	C2
TP5	D2
TP6	E1
TP7	E1
TP10	D3
TP11	E2
TP12	D2
TP13	B2
TP14	D2
TP15	A5
TP16	A5
X1	C3

APR-24 board

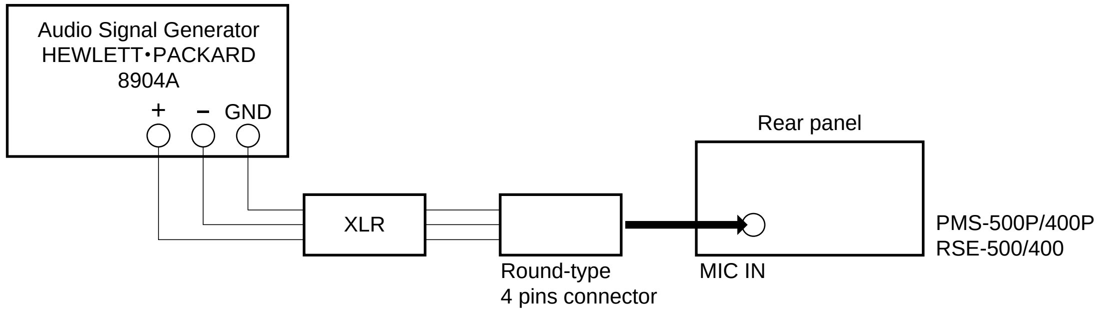
[Setting]

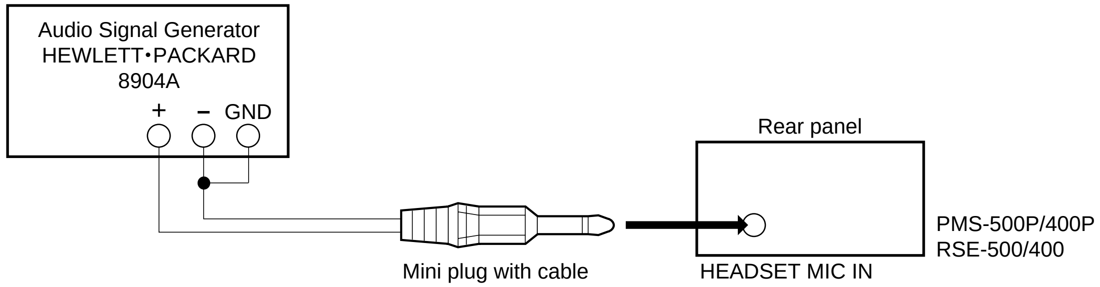
1. **Set the SW1 (D-5) switch to “ON”.**

2. **Select the “29. MAINTENANCE” from the “SETTING menu” on the Monitor screen. (Refer to “Diagnosing the System” of the “Operating instructions”.**

3. **Then, set the loop back to “ON” on the Monitor screen.**

[Connention]

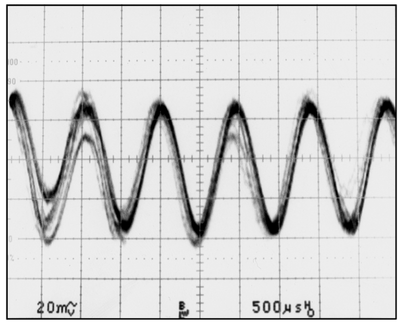

Audio Signal Generator
HEWLETT•PACKARD
8904A
+
–
GND
XLR
Round-type
4 pins connector
Rear panel
MIC IN
PMS-500P/400P
RSE-500/400


Audio Signal Generator
HEWLETT•PACKARD
8904A
+
–
GND
Mini plug with cable
Rear panel
HEADSET MIC IN
PMS-500P/400P
RSE-500/400

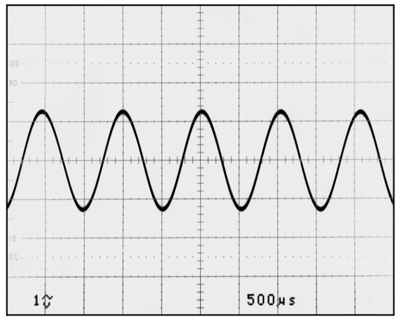
APR-24 (2/3)

①TP10 (D-3)

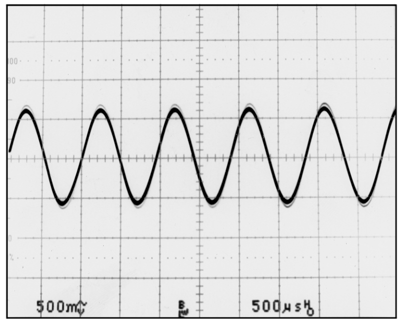
②TP12 (D-2)



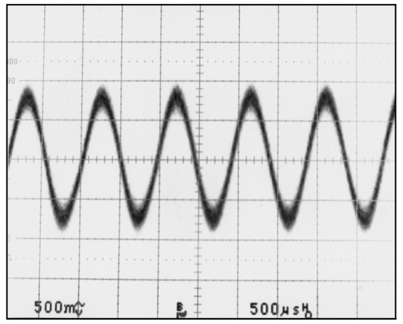
③TP13 (B-2)



④TP2 (A-3)

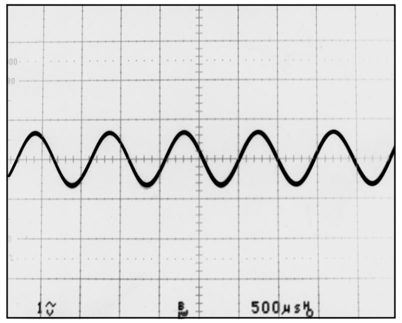


⑤TP3 (A-2)

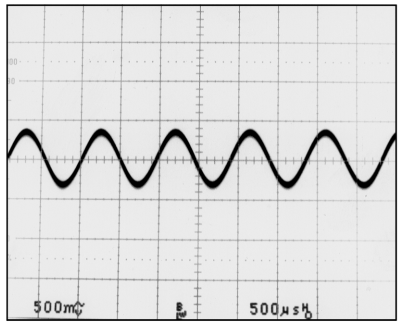


⑥TP4 (C-2)

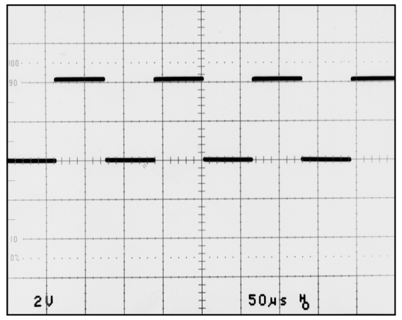
⑦TP14 (D-2)



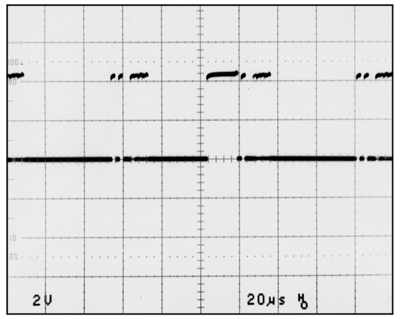
⑧TP5 (D-2)



⑨TP15 (A-5)

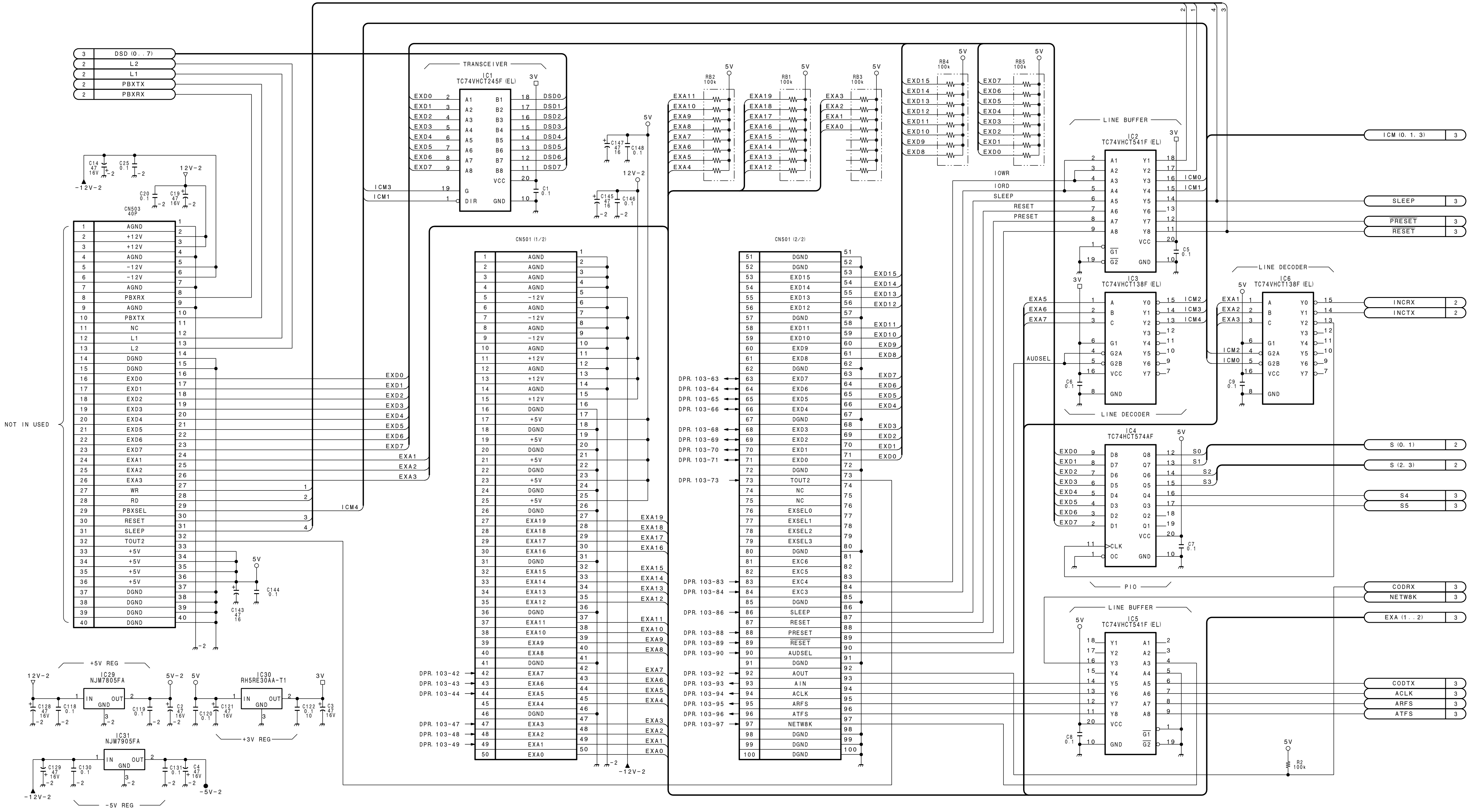


⑩TP16 (A-5)



Measurement Condition : MIC IN/HEADSET MIC IN 1KHz, 53dBs

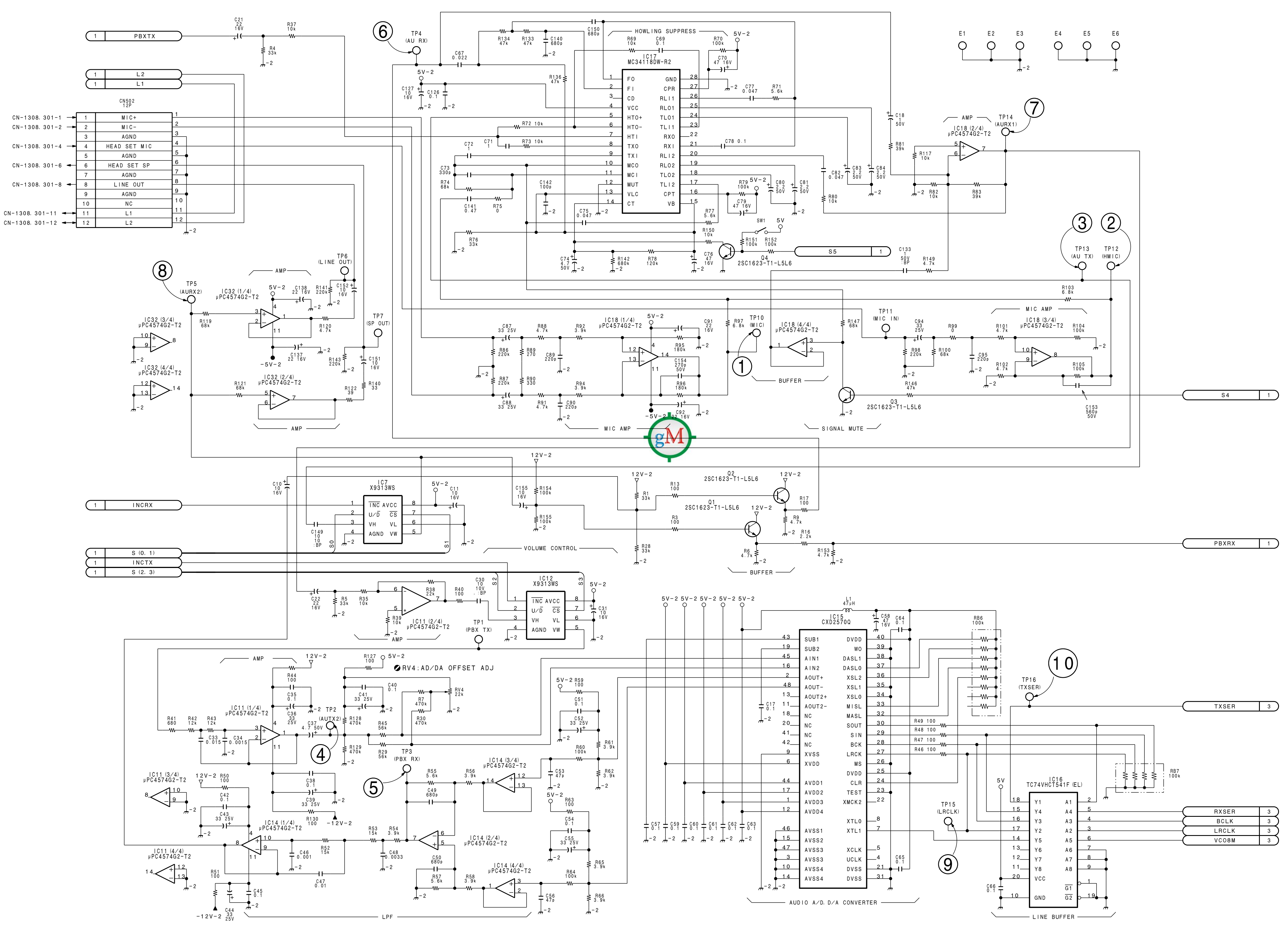
APR-24: AUDIO AD/DA
AUDIO COMPRESS/DECOMPRESS


1
2
3
4
5
DSD (0 . 7)
L2
L1
PBXTX
PBXRX
TRANSCEIVER
IC1
TC74VHCT245F (EL)
CN503
40P
NOT IN USED
AGND
+12V
-12V
PBXRX
PBXTX
NC
DGND
EXD0
EXD1
EXD2
EXD3
EXD4
EXD5
EXD6
EXD7
EXA1
EXA2
EXA3
WR
RD
PBXSEL
RESET
SLEEP
TOUT2
+5V
ICM1
ICM3
ICM4
CN501 (1/2)
CN501 (2/2)
RB1 100k
RB2 100k
RB3 100k
RB4 100k
RB5 100k
LINE BUFFER
IC2
TC74VHCT541F (EL)
LINE DECODER
IC3
TC74VHCT138F (EL)
IC6
TC74VHCT138F (EL)
IC4
TC74HCT574AF
PIO
IC5
TC74VHCT541F (EL)
IOWR
IORD
SLEEP
RESET
PRESET
AUDSEL
ICM (0, 1, 3)
INCRX
INCTX
S (0, 1)
S (2, 3)
S4
S5
CODRX
NETW8K
EXA (1 . . 2)
CODTX
ACLK
ARFS
ATFS
EXSEL0
EXSEL1
EXSEL2
EXSEL3
EXC3
EXC4
EXC5
EXC6
AOUT
AIN
NETW8K
DPR. 103-42
DPR. 103-63
DPR. 103-97
R2 100k
+5V REG
IC29
NJM7805FA
+3V REG
IC30
RH5RE30AA-T1
-5V REG
IC31
NJM7905FA
12V-2
-12V-2
5V-2
-5V-2
5V
3V

B-PMS600-APR24/M

RSE-500/400 (UC)
PMS-500P/400P (CE)

APR-24: AUDIO AD/DA
AUDIO COMPRESS/DECOMPRESS

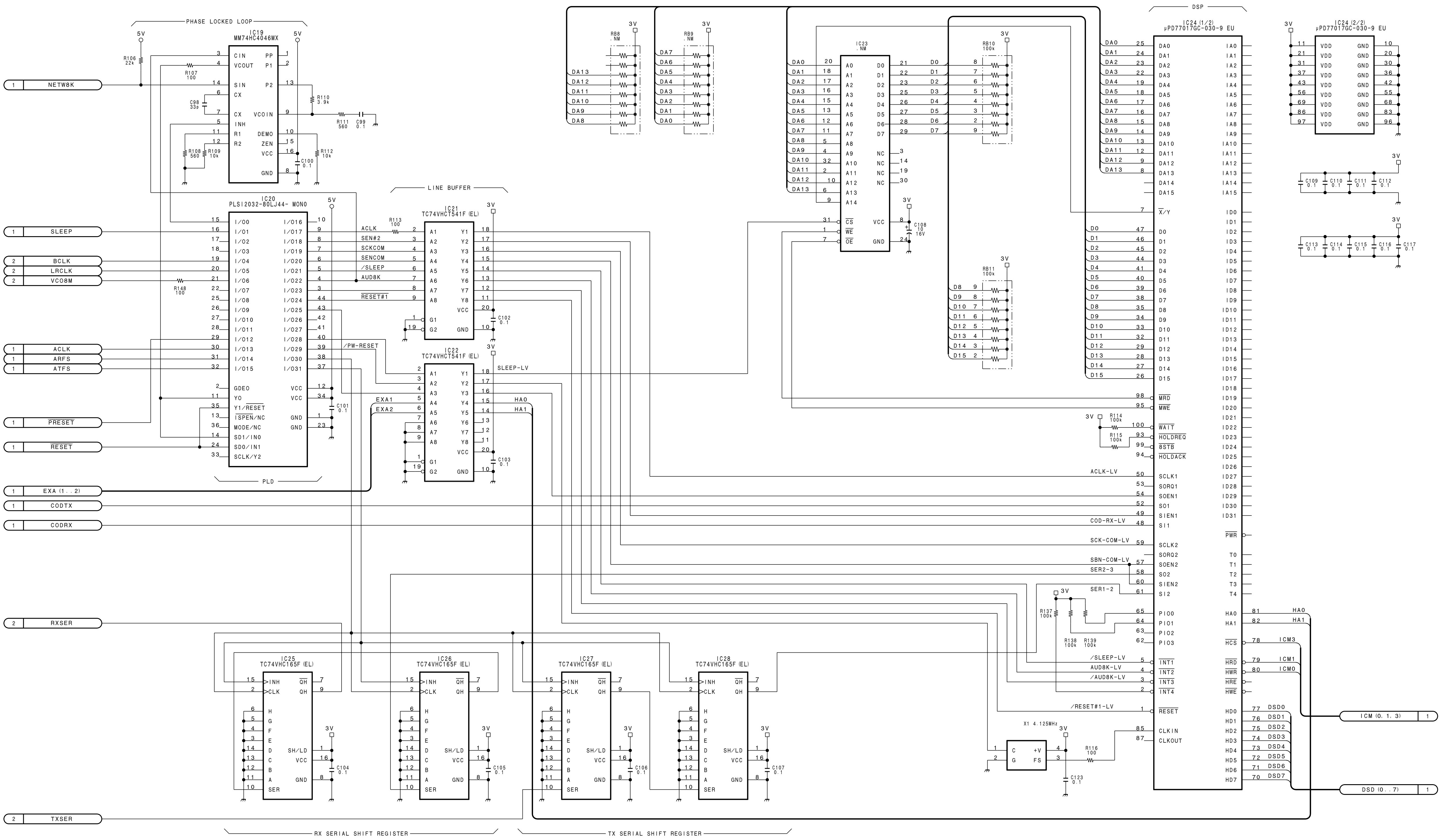


1
2
3
4
5
A
B
C
D
E
F
G
H
PBXTX
L2
L1
CN502 12P
CN-1308, 301-1
CN-1308, 301-2
CN-1308, 301-4
CN-1308, 301-6
CN-1308, 301-8
CN-1308, 301-11
CN-1308, 301-12
MIC+
MIC-
AGND
HEAD SET MIC
HEAD SET SP
LINE OUT
NC
HOWLING SUPPRESS
IC17 MC34118DW-R2
TP4 (AU RX)
TP5 (AURX2)
TP6 (LINE OUT)
TP7 (SP OUT)
TP10 (MIC)
TP11 (MIC IN)
TP12 (HMIC)
TP13 (AU TX)
TP14 (AURX1)
TP1 (PBX TX)
TP2 (AUTX2)
TP3 (PBX RX)
TP15 (LRCLK)
TP16 (TXSER)
E1
E2
E3
E4
E5
E6
IC18 (1/4) μPC4574G2-T2
IC18 (2/4) μPC4574G2-T2
IC18 (3/4) μPC4574G2-T2
IC18 (4/4) μPC4574G2-T2
IC32 (1/4) μPC4574G2-T2
IC32 (2/4) μPC4574G2-T2
IC32 (3/4) μPC4574G2-T2
IC32 (4/4) μPC4574G2-T2
AMP
MIC AMP
BUFFER
SIGNAL MUTE
Q3 2SC1623-T1-L5L6
Q4 2SC1623-T1-L5L6
SW1
S5
S4
INCRX
S(0,1)
INCTX
S(2,3)
IC7 X9313WS
IC12 X9313WS
VOLUME CONTROL
Q1 2SC1623-T1-L5L6
Q2 2SC1623-T1-L5L6
PBXRX
IC11 (1/4) μPC4574G2-T2
IC11 (2/4) μPC4574G2-T2
IC11 (3/4) μPC4574G2-T2
IC11 (4/4) μPC4574G2-T2
IC14 (1/4) μPC4574G2-T2
IC14 (2/4) μPC4574G2-T2
IC14 (3/4) μPC4574G2-T2
IC14 (4/4) μPC4574G2-T2
RV4:AD/DA OFFSET ADJ
LPF
IC15 CXD2570Q
AUDIO A/D, D/A CONVERTER
IC16 TC74VHCT541F (EL)
LINE BUFFER
TXSER
RXSER
BCLK
LRCLK
VCO8M
12V-2
5V-2
-5V-2
-12V-2

APR-24 (2/3)
B-PMS600-APR24/M

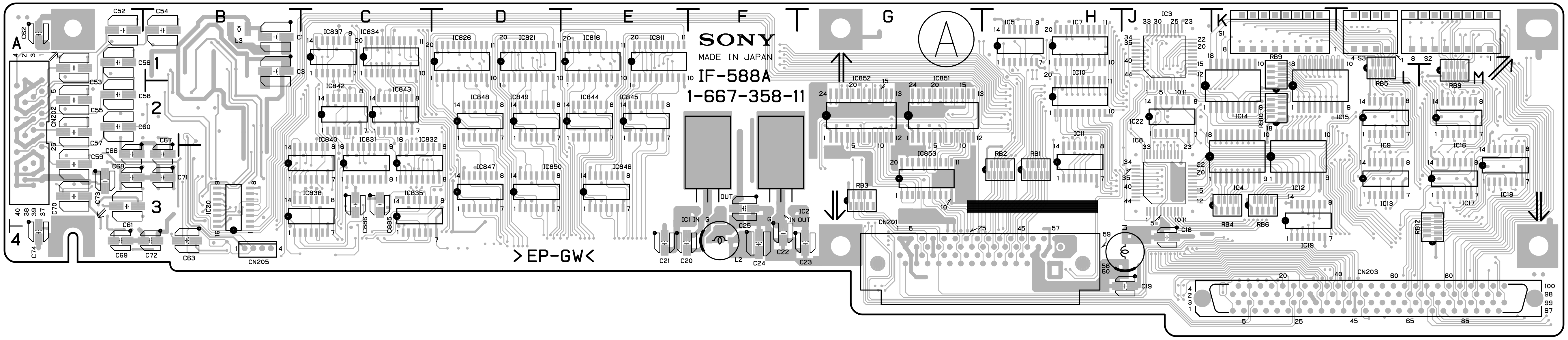
APR-24 (3/3)

APR-24: AUDIO AD/DA
AUDIO COMPRESS/DECOMPRESS


PHASE LOCKED LOOP
IC19 MM74HC4046MX
NETW8K
IC20 PLSI2032-80LJ44-MONO
PLD
SLEEP
BCLK
LRCLK
VCO8M
ACLK
ARFS
ATFS
PRESET
RESET
EXA (1..2)
CODTX
CODRX
RXSER
TXSER
LINE BUFFER
IC21 TC74VHCT541F (EL)
IC22 TC74VHCT541F (EL)
RB8 NM
RB9 NM
IC23 NM
RB10 100k
RB11 100k
DSP
IC24 (1/2) μPD77017GC-030-9 EU
IC24 (2/2) μPD77017GC-030-9 EU
X1 4.125MHz
IC25 TC74VHC165F (EL)
IC26 TC74VHC165F (EL)
IC27 TC74VHC165F (EL)
IC28 TC74VHC165F (EL)
RX SERIAL SHIFT REGISTER
TX SERIAL SHIFT REGISTER
ICM (0, 1, 3)
DSD (0..7)
ACLK-LV
COD-RX-LV
SCK-COM-LV
SBN-COM-LV
SER2-3
SER1-2
/SLEEP-LV
AUD8K-LV
/AUD8K-LV
/RESET#1-LV
SLEEP-LV
1
2
3
4
5
A
B
C
D
E
F
G
H

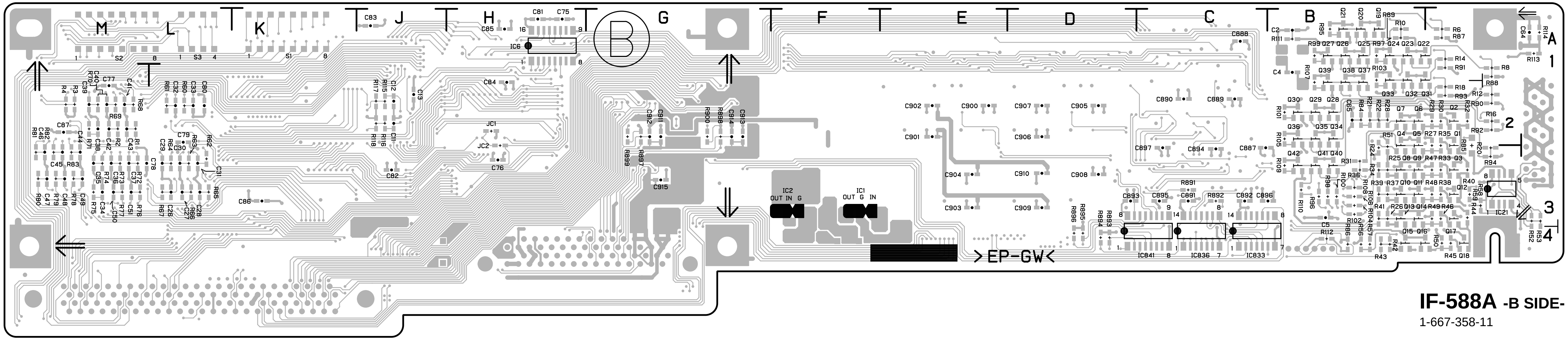
APR-24 (3/3)
B-PMS600-APR24/M

10-19


A
B
C
D
E
F
G
H
J
K
L
M
1
2
3
4
SONY
MADE IN JAPAN
IF-588A
1-667-358-11
>EP-GW<
CN201
CN202
CN203
CN205
IC1 IN G
IC2 IN OUT
S1
S2
S3

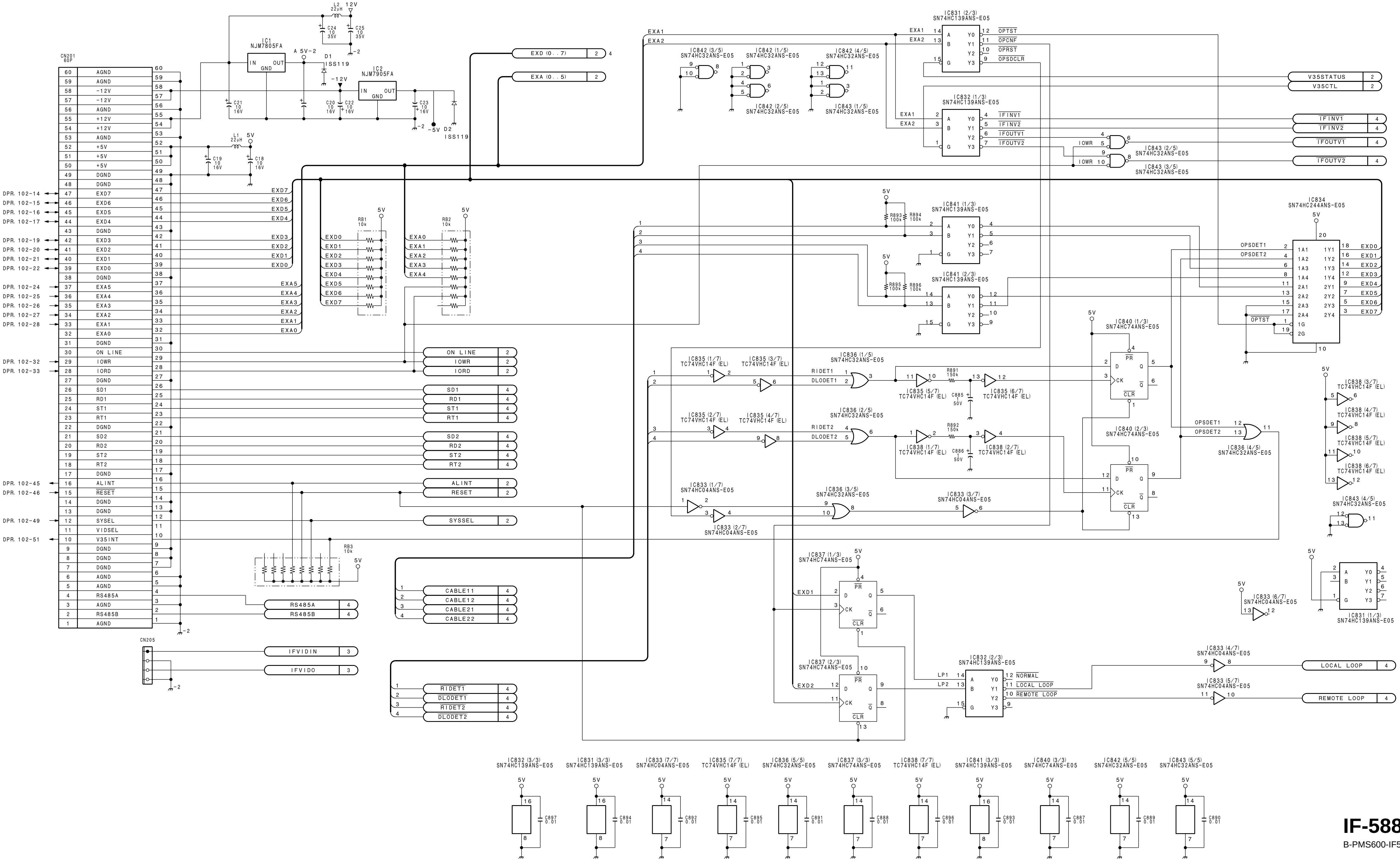
IF-588A -A SIDE-
1-667-358-11

*: B SIDE		IC10	H2	IC826	D1	IC847	D3	*Q3	A3	*Q19	B1	*Q35	B2	RB9	K1
		IC11	H3	IC831	C3	IC848	D2	*Q4	B3	*Q20	B1	*Q36	B2	RB10	K2
CN201	G4	IC12	K3	IC832	C3	IC849	D2	*Q5	B3	*Q21	B1	*Q37	B2	RB12	M4
CN202	A1	IC13	L3	IC833	C4	IC850	D3	*Q6	B2	*Q22	A1	*Q38	B2		
CN203	K4	IC14	K2	*IC834	C1	IC851	G2	*Q7	B2	*Q23	B1	*Q39	B2	S1	K1
CN205	B4	IC15	K2	IC835	C3	IC852	G2	*Q8	B3	*Q24	B1	*Q40	B3	S2	M1
		IC16	M2	*IC836	C4	IC853	G3	*Q9	B3	*Q25	B1	*Q41	B3	S3	L1
IC1	F3	IC17	M3	IC837	C1			*Q10	B3	*Q26	B1	*Q42	B3		
IC2	F3	IC18	M3	IC838	C3	*JC1	H2	*Q11	B3	*Q27	B1				
IC3	J1	IC19	K3	IC840	C3			*Q12	A3	*Q28	B2	RB1	H3		
IC4	K3	IC20	B3	*IC841	C4	L1	J4	*Q13	B3	*Q29	B2	RB2	H3		
IC5	H1	*IC21	A3	IC842	C2	L2	F4	*Q14	B3	*Q30	B2	RB3	G3		
*IC6	H1	IC22	J2	IC843	C2	L3	B1	*Q15	B4	*Q31	A1	RB4	K3		
IC7	H1	IC811	E1	IC844	E2			*Q16	A4	*Q32	B1	RB5	L1		
IC8	J3	IC816	E1	IC845	E2	*Q1	A3	*Q17	A3	*Q33	B1	RB6	K3		
IC9	L2	IC821	D1	IC846	E3	*Q2	A2	*Q18	A4	*Q34	B2	RB8	M1		


M
L
K
J
H
G
F
E
D
C
B
A
1
2
3
4
S1
S2
S3
IC2 OUT IN G
IC1 OUT G IN
>EP-GW<
JC1
JC2
IC21

IF-588A -B SIDE-
1-667-358-11

IF-588A:VIDEO IN SELECT, PARALLEL I/O

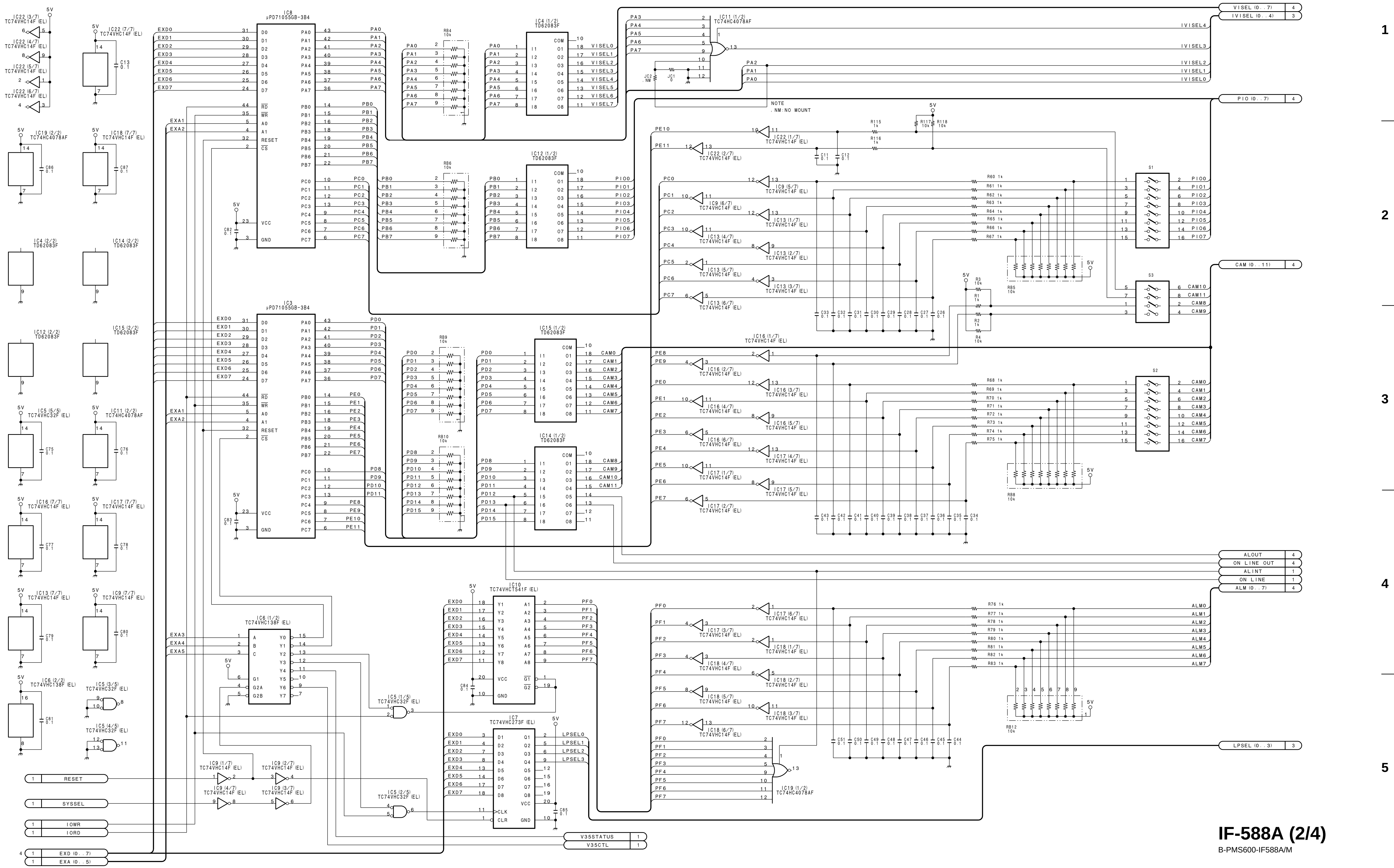

CN201 60P
AGND
-12V
+12V
+5V
DGND
EXD7
EXD6
EXD5
EXD4
EXD3
EXD2
EXD1
EXD0
EXA5
EXA4
EXA3
EXA2
EXA1
EXA0
ON LINE
IOWR
IORD
SD1
RD1
ST1
RT1
SD2
RD2
ST2
RT2
ALINT
RESET
SYSEL
VIDSEL
V35INT
RS485A
RS485B
DPR. 102-14
DPR. 102-49
DPR. 102-51
IC1 NJM7805FA
IC2 NJM7905FA
D1 ISS119
D2 ISS119
L1 22µH
L2 22µH
RB1 10k
RB2 10k
R83 10k
EXD (0.. 7)
EXA (0.. 5)
IC831 (2/3) SN74HC139ANS-E05
IC832 (1/3) SN74HC139ANS-E05
IC841 (1/3) SN74HC139ANS-E05
IC841 (2/3) SN74HC139ANS-E05
IC842 (3/5) SN74HC32ANS-E05
IC843 (1/5) SN74HC32ANS-E05
IC834 SN74HC244ANS-E05
IC835 (1/7) TC74VHC14F (EL)
IC836 (1/5) SN74HC32ANS-E05
IC840 (1/3) SN74HC74ANS-E05
IC840 (2/3) SN74HC74ANS-E05
IC833 (1/7) SN74HC04ANS-E05
IC837 (1/3) SN74HC74ANS-E05
IC837 (2/3) SN74HC74ANS-E05
IC832 (2/3) SN74HC139ANS-E05
IC838 (3/7) TC74VHC14F (EL)
OPTST
OPCNF
OPRST
OPSDCLR
V35STATUS
V35CTL
IFINV1
IFINV2
IFOUTV1
IFOUTV2
OPSDET1
OPSDET2
RIDET1
DLODET1
RIDET2
DLODET2
CABLE11
CABLE12
CABLE21
CABLE22
CN205
IFVIDIN
IFVIDO
NORMAL
LOCAL LOOP
REMOTE LOOP
LP1
LP2
5V
12V
-12V

IF-588A (1/4)

B-PMS600-IF588A/M

http://getMANUAL.com

IF-588A:VIDEO IN SELECT, PARALLEL I/O

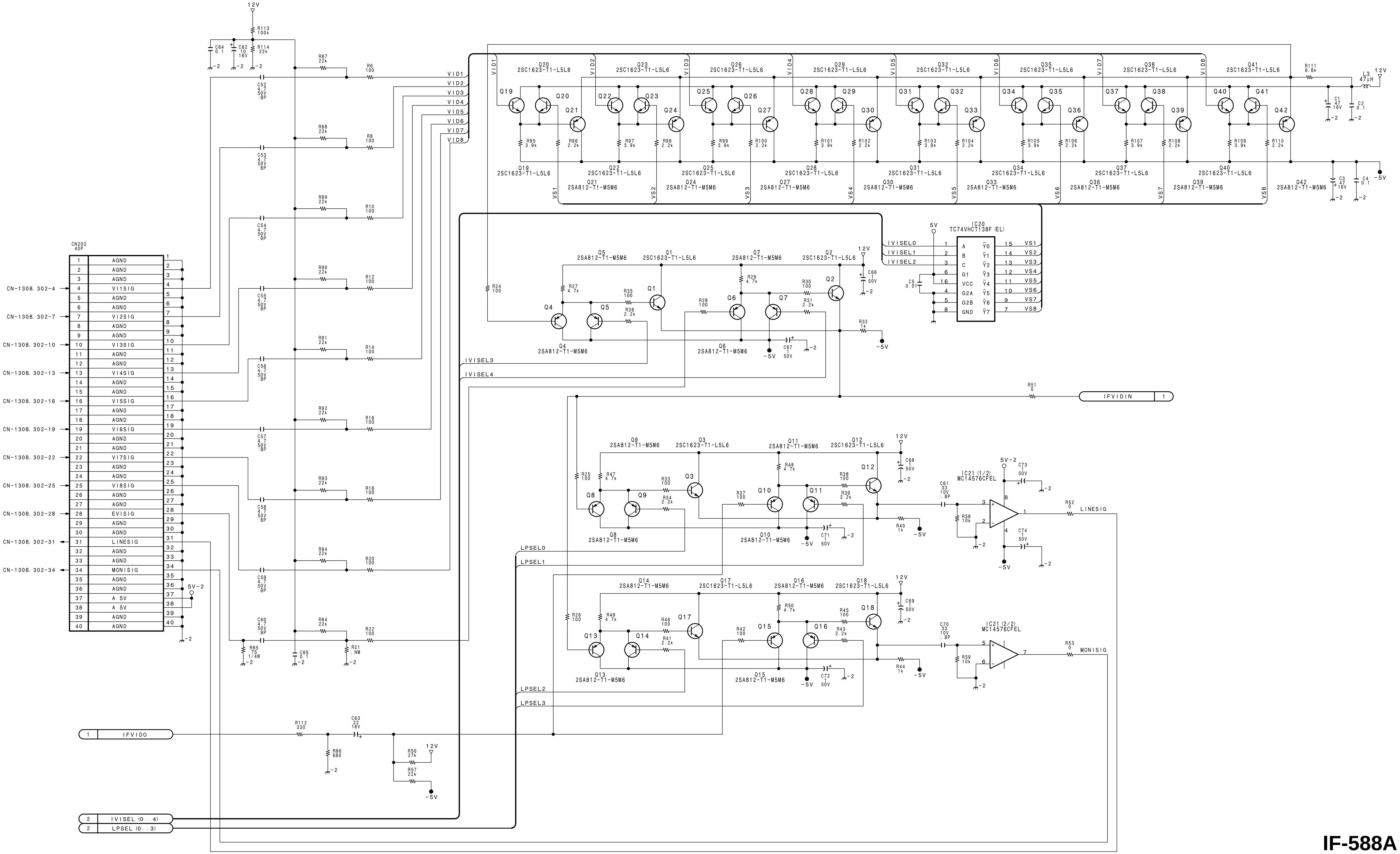

IC8
μPD71055GB-3B4
IC3
μPD71055GB-3B4
IC4 (1/2)
TD62083F
IC12 (1/2)
TD62083F
IC15 (1/2)
TD62083F
IC14 (1/2)
TD62083F
IC11 (1/2)
TC74HC4078AF
IC6 (1/2)
TC74VHC138F (EL)
IC10
TC74VHCT541F (EL)
IC7
TC74VHC273F (EL)
IC19 (1/2)
TC74HC4078AF
IC5 (1/5)
TC74VHC32F (EL)
IC5 (2/5)
TC74VHC32F (EL)
IC22 (3/7)
TC74VHC14F (EL)
IC19 (2/2)
TC74HC4078AF
IC18 (7/7)
TC74VHC14F (EL)
S1
S2
S3
RB4
10k
RB6
10k
RB9
10k
RB10
10k
RB5
10k
RB8
10k
RB12
10k
NOTE
. NM:NO MOUNT
5V
EXD0
EXD1
EXD2
EXD3
EXD4
EXD5
EXD6
EXD7
EXA1
EXA2
EXA3
EXA4
EXA5
VISEL (0 . 7)
IVISEL (0 . 4)
PIO (0 . 7)
CAM (0 . 11)
ALOUT
ON LINE OUT
ALINT
ON LINE
ALM (0 . 7)
LPSEL (0 . 3)
RESET
SYSSEL
IOWR
IORD
EXD (0 . 7)
EXA (0 . 5)
V35STATUS
V35CTL
1
2
3
4
5

IF-588A (2/4)

B-PMS600-IF588A/M

A B C D E F G H

IF-588A:VIDEO IN SELECT, PARALLEL I/O

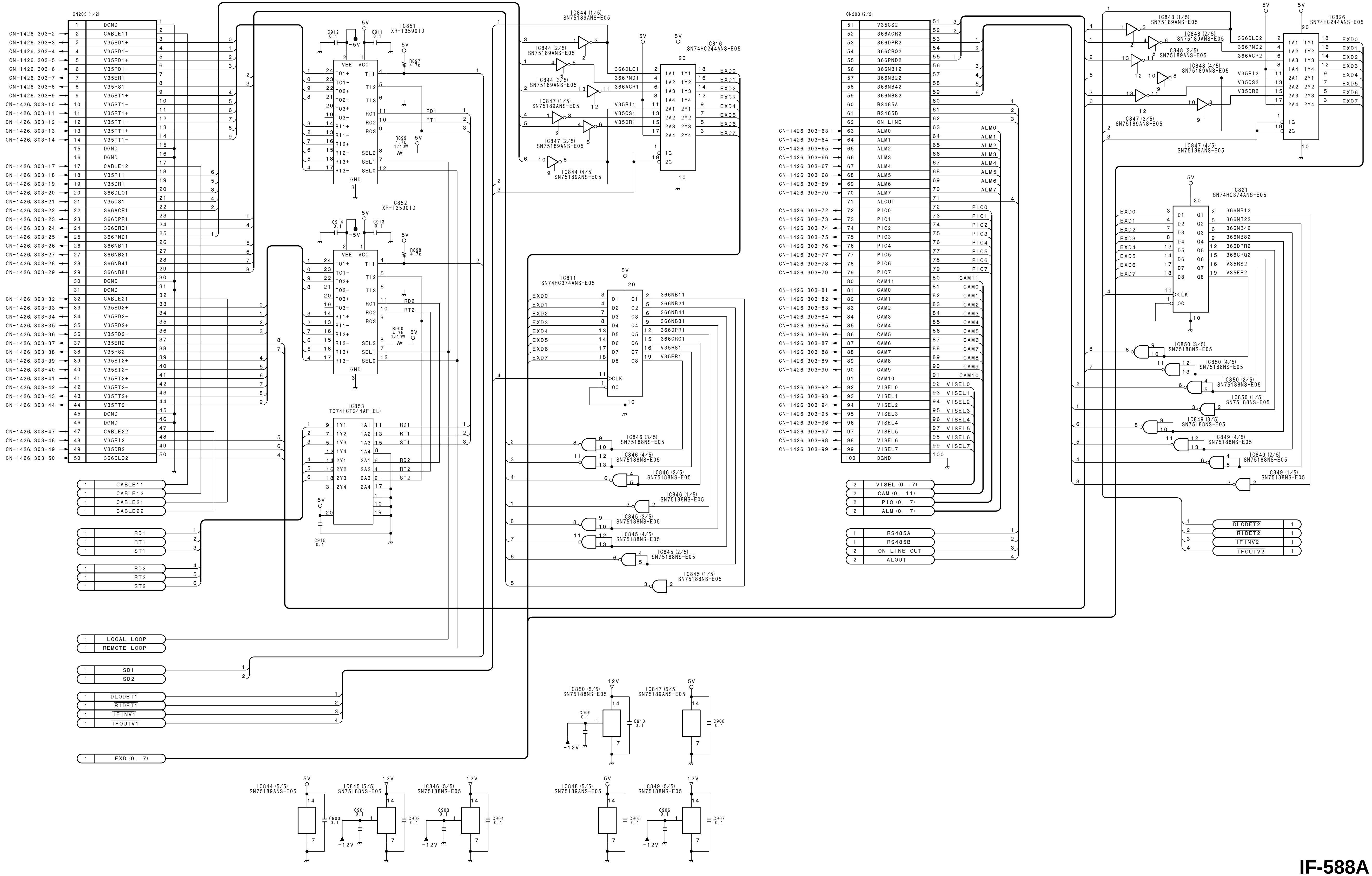


1
2
3
4
5
CN202
40P
AGND
VI1SIG
VI2SIG
VI3SIG
VI4SIG
VI5SIG
VI6SIG
VI7SIG
VI8SIG
EVISIG
LINESIG
MONISIG
A 5V
CN-1308.302-4
CN-1308.302-7
CN-1308.302-10
CN-1308.302-13
CN-1308.302-16
CN-1308.302-19
CN-1308.302-22
CN-1308.302-25
CN-1308.302-28
CN-1308.302-31
CN-1308.302-34
12V
5V-2
-5V
VID1
VID2
VID3
VID4
VID5
VID6
VID7
VID8
VS1
VS2
VS3
VS4
VS5
VS6
VS7
VS8
2SC1623-T1-L5L6
2SA812-T1-M5M6
IC20
TC74VHCT138F (EL)
IVISEL0
IVISEL1
IVISEL2
IVISEL3
IVISEL4
IFVIDIN
LPSEL0
LPSEL1
LPSEL2
LPSEL3
IC21 (1/2)
MC14576CFEL
IC21 (2/2)
MC14576CFEL
LINESIG
MONISIG
IFVIDO
IVISEL (0..4)
LPSEL (0..3)
L3
47μH

IF-588A (3/4)

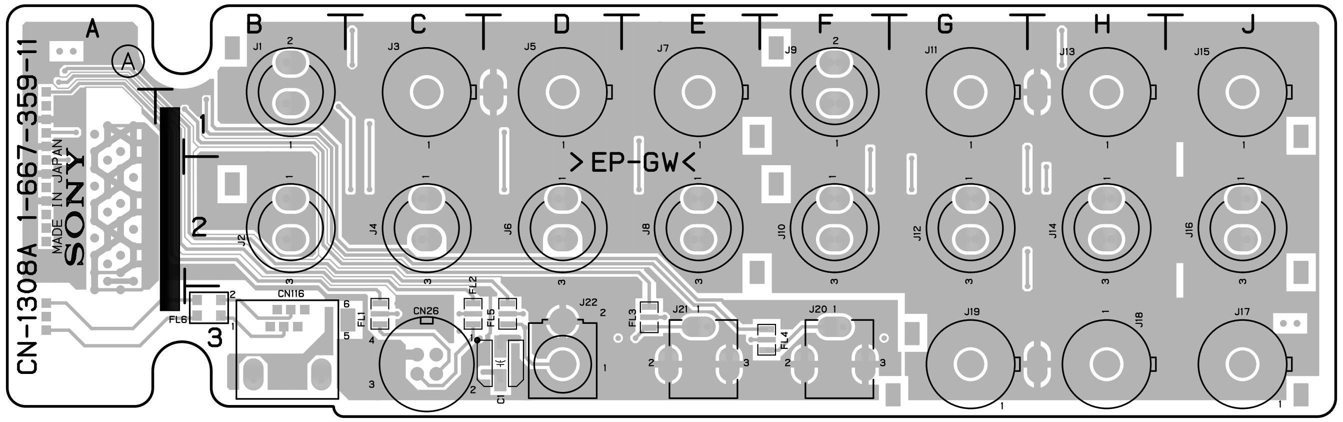
B-PMS600-IF588A/M

IF-588A:VIDEO IN SELECT, PARALLEL I/O


CN203 (1/2)
CN203 (2/2)
IC851 XR-T5901D
IC852 XR-T5901D
IC853 TC74HCT244AF (EL)
IC811 SN74HC374ANS-E05
IC816 SN74HC244ANS-E05
IC826 SN74HC244ANS-E05
IC821 SN74HC374ANS-E05
IC844 SN75189ANS-E05
IC847 SN75189ANS-E05
IC848 SN75189ANS-E05
IC845 SN75188NS-E05
IC846 SN75188NS-E05
IC849 SN75188NS-E05
IC850 SN75188NS-E05
CABLE11
CABLE12
CABLE21
CABLE22
RD1
RT1
ST1
RD2
RT2
ST2
LOCAL LOOP
REMOTE LOOP
SD1
SD2
DLODET1
RIDET1
IFINV1
IFOUTV1
EXD (0..7)
VISEL (0..7)
CAM (0..11)
PIO (0..7)
ALM (0..7)
RS485A
RS485B
ON LINE OUT
ALOUT
DLODET2
RIDET2
IFINV2
IFOUTV2
5V
-5V
12V
-12V
1
2
3
4
5

IF-588A (4/4)

B-PMS600-IF588A/M

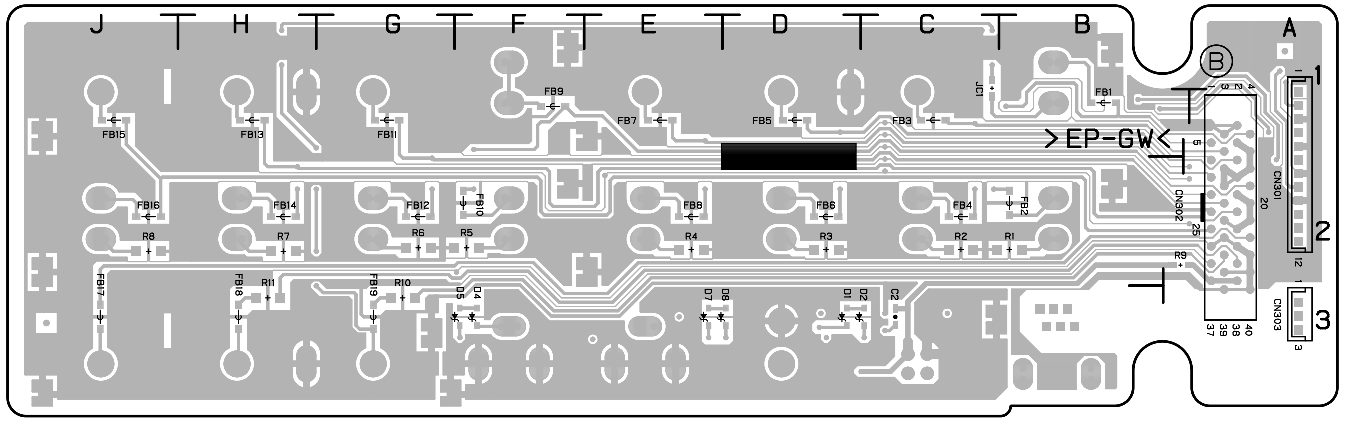

A
B
C
D
E
F
G
H
J
1
2
3
CN-1308A 1-667-359-11
MADE IN JAPAN
SONY
>EP-GW<
J1
J2
J3
J4
J5
J6
J7
J8
J9
J10
J11
J12
J13
J14
J15
J16
J17
J18
J19
J20
J21
J22
CN116
CN26
FL1
FL2
FL3
FL4
FL5
FL6
C1

CN-1308A -A SIDE-

1-667-359-11

*: B SIDE

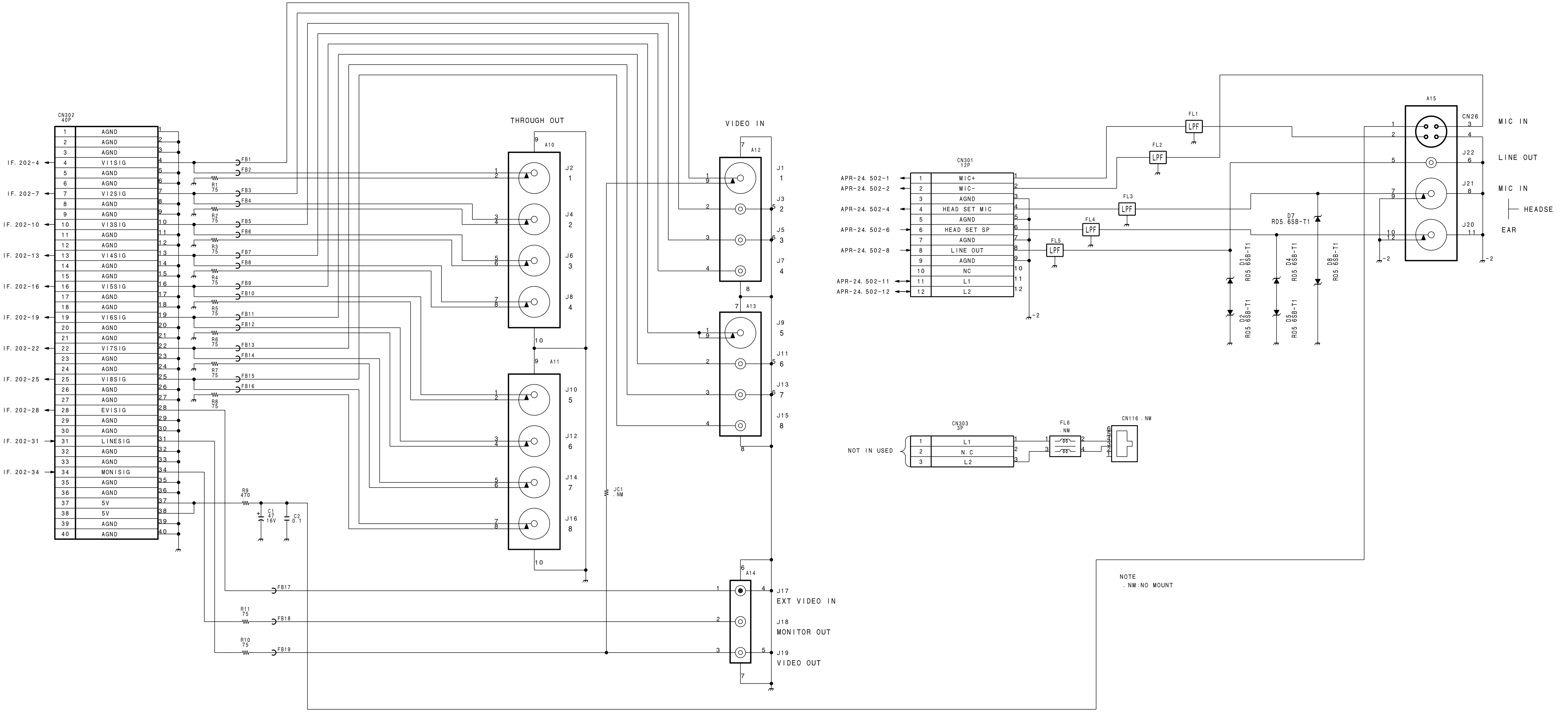
CN116	B3
*CN301	A1
*CN302	A1
*CN303	A3
*D1	D3
*D2	C3
*D4	F3
*D5	F3
*D7	E3
*D8	D3
*FB1	B1
*FB2	B2
*FB3	C1
*FB4	C2
*FB5	D1
*FB6	D2
*FB7	E1
*FB8	E2
*FB9	F1
*FB10	F2
*FB11	G1
*FB12	G2
*FB13	H1
*FB14	H2
*FB15	J1
*FB16	J2
*FB17	J3
*FB18	H3
*FB19	G3
FL1	C3
FL2	C3
FL3	E3
FL4	F3
FL5	D3
FL6	B3


J
H
G
F
E
D
C
B
A
1
2
3
>EP-GW<
CN301
CN302
CN303
FB1
FB2
FB3
FB4
FB5
FB6
FB7
FB8
FB9
FB10
FB11
FB12
FB13
FB14
FB15
FB16
FB17
FB18
FB19
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
D1
D2
D4
D5
D7
D8
C2
JC1

CN-1308A -B SIDE-

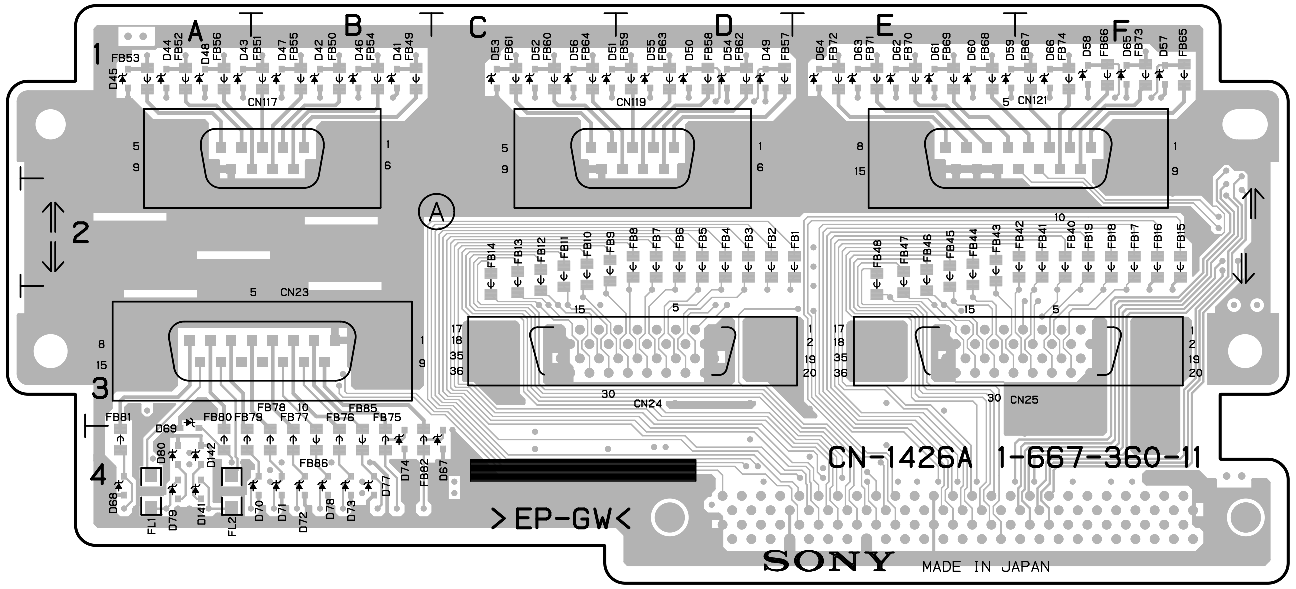
1-667-359-11

CN-1308A: VIDEO IN/OUT CONNECTOR
AUDIO IN/OUT CONNECTOR


CN302 40P
1 AGND
2 AGND
3 AGND
4 VI1SIG
5 AGND
6 AGND
7 VI2SIG
8 AGND
9 AGND
10 VI3SIG
11 AGND
12 AGND
13 VI4SIG
14 AGND
15 AGND
16 VI5SIG
17 AGND
18 AGND
19 VI6SIG
20 AGND
21 AGND
22 VI7SIG
23 AGND
24 AGND
25 VI8SIG
26 AGND
27 AGND
28 EVISIG
29 AGND
30 AGND
31 LINESIG
32 AGND
33 AGND
34 MONISIG
35 AGND
36 AGND
37 5V
38 5V
39 AGND
40 AGND
IF. 202-4
IF. 202-7
IF. 202-10
IF. 202-13
IF. 202-16
IF. 202-19
IF. 202-22
IF. 202-25
IF. 202-28
IF. 202-31
IF. 202-34
THROUGH OUT
VIDEO IN
A10
A11
A12
A13
A14
A15
J2 1
J4 2
J6 3
J8 4
J10 5
J12 6
J14 7
J16 8
J1 1
J3 2
J5 3
J7 4
J9 5
J11 6
J13 7
J15 8
R9 470
C1 47 16V
C2 0.1
JC1 :NM
J17 EXT VIDEO IN
J18 MONITOR OUT
J19 VIDEO OUT
FB17
FB18
FB19
R11 75
R10 75
CN301 12P
APR-24. 502-1
APR-24. 502-2
APR-24. 502-4
APR-24. 502-6
APR-24. 502-8
APR-24. 502-11
APR-24. 502-12
1 MIC+
2 MIC-
3 AGND
4 HEAD SET MIC
5 AGND
6 HEAD SET SP
7 AGND
8 LINE OUT
9 AGND
10 NC
11 L1
12 L2
FL1 LPF
FL2 LPF
FL3 LPF
FL4 LPF
FL5 LPF
D7 RD5.6SB-T1
D1 RD5.6SB-T1
D4 RD5.6SB-T1
D8 RD5.6SB-T1
D2 RD5.6SB-T1
D3 RD5.6SB-T1
CN26
MIC IN
J22 LINE OUT
J21 MIC IN
J20 EAR
HEADSE
NOT IN USED
CN303 3P
1 L1
2 N.C
3 L2
FL6 :NM
CN116 :NM
NOTE
:NM:NO MOUNT

CN-1308A

B-PMS600-CN1308A/M

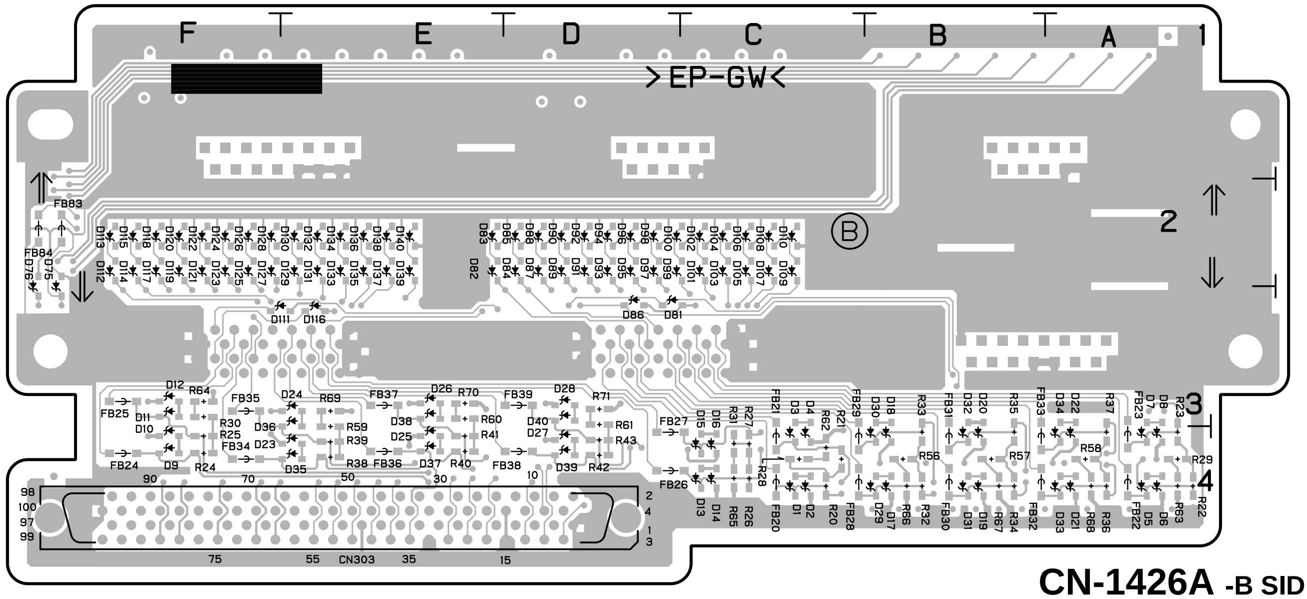


CN-1426A -A SIDE-

1-667-360-11

*: B SIDE

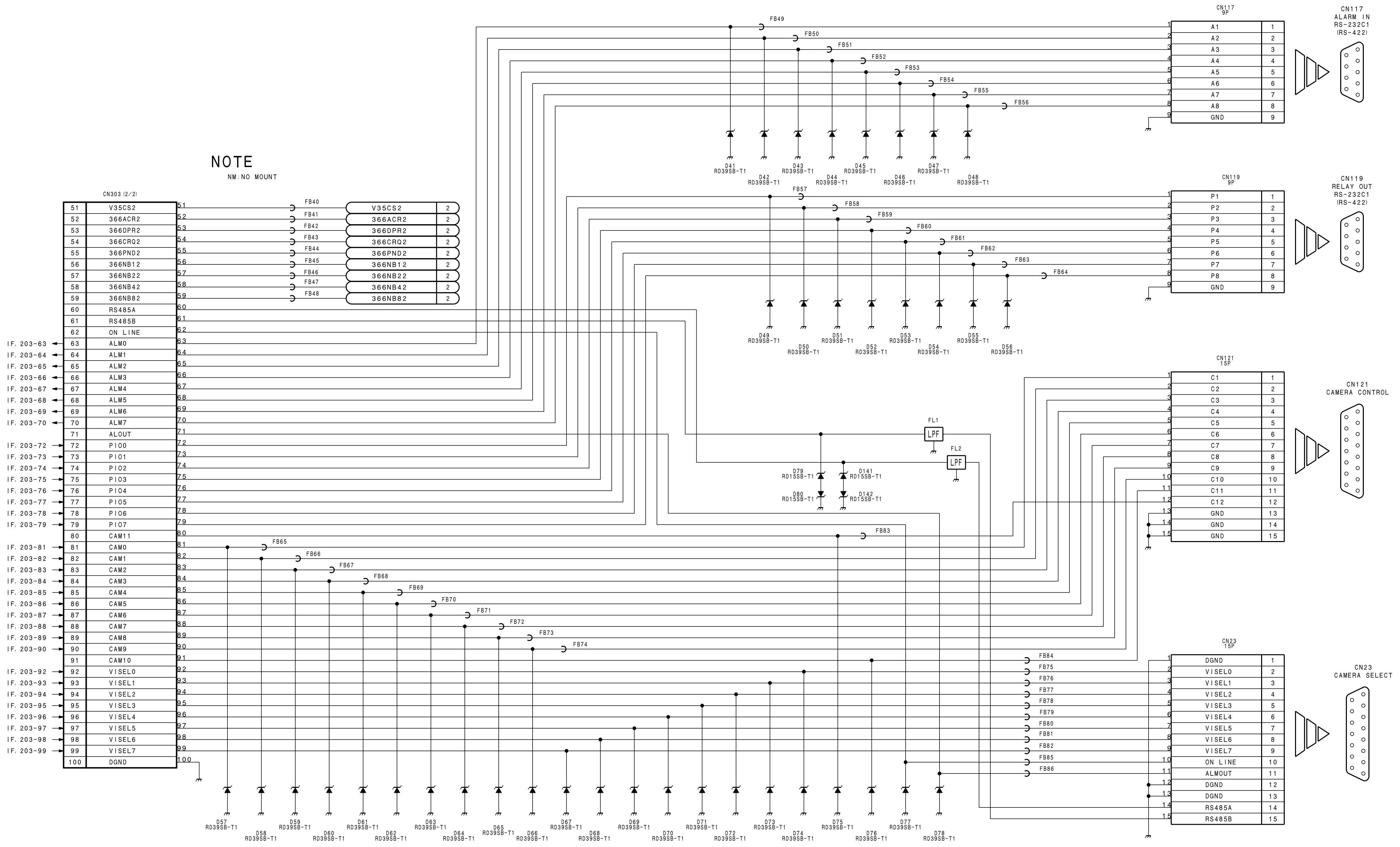
CN23	B3
CN24	D3
CN25	F3
CN117	B1
CN119	D1
CN121	F1
*CN303	D4
*D1	C4
*D2	C4
*D3	C4
*D4	C4
*D5	A4
*D6	A4
*D7	A4
*D8	A4
*D9	F4
*D10	F4
*D11	F3
*D12	F3
*D13	C4
*D14	C4
*D15	C4
*D16	C4
*D17	B4
*D18	B4
*D19	B4
*D20	B4
*D21	A4
*D22	A4
*D23	E4
*D24	E3
*D25	E4
*D26	E3
*D27	D4
*D28	D3
*D29	B4
*D30	B4
*D31	B4
*D32	B4
*D33	A4
*D34	A4
*D35	E4
*D36	E4
*D37	E4
*D38	E3
*D39	D4
*D40	D3
D41	B1
D42	B1
D43	A1
D44	A1
D45	A1
D46	B1
D47	B1
D48	A1
D49	D1
D50	D1
D51	C1
D52	C1
D53	C1
D54	D1
D55	D1
D56	C1
D57	F1
D58	F1
D59	E1
D60	E1
D61	E1
D62	E1
D63	E1
D64	E1
D65	F1
D66	F1
D67	C4
D68	A4
D69	A4
D70	B4
D71	B4
*D99	C2
*D100	C2
*D101	C2
*D102	C2
*D103	C2
*D104	C2
*D105	C2
*D106	C2
*D107	C2
*D108	C2
*D109	C2
*D110	C2
*D111	E3
*D112	F2
*D113	F2
*D114	F2
*D115	F2
*D116	E3
*D117	F2
*D118	F2
*D119	F2
*D120	F2
*D121	F2
*D122	F2
*D123	F2
*D124	F2
*D125	F2
D72	B4
D73	B4
D74	B4
*D75	F2
*D76	F2
D77	B4
D78	B4
D79	A4
D80	A4
*D81	D3
*D82	E2
*D83	E2
*D84	D2
*D85	D2
*D86	D3
*D87	D2
*D88	D2
*D89	D2
*D90	D2
*D91	D2
*D92	D2
*D93	D2
*D94	D2
*D95	D2
*D96	D2
*D97	D2
*D98	D2
*D126	F2
*D127	F2
*D128	F2
*D129	E2
*D130	E2
*D131	E2
*D132	E2
*D133	E2
*D134	E2
*D135	E2
*D136	E2
*D137	E2
*D138	E2
*D139	E2
*D140	E2
D141	A4
D142	A4
FB1	E2
FB2	D2
FB3	D2
FB4	D2
FB5	D2
FB6	D2
FB7	D2
FB8	D2
FB9	C2
FB10	C2
FB11	C2
FB12	C2
FB13	C2
FB14	C2
FB15	F2
FB16	F2
FB17	F2
FB18	F2
FB19	F2
*FB20	C4
*FB21	C4
*FB22	A4
*FB23	A4
*FB24	F4
*FB25	F3
*FB26	D4
*FB27	D4
*FB28	C4
*FB29	C4
*FB30	B4
*FB31	B4
*FB32	B4
*FB33	B4
*FB34	F4
*FB35	F3
*FB36	E4
*FB37	E3
*FB38	D4
*FB39	D3
FB40	F2
FB41	F2
FB42	F2
FB43	E2
FB44	E2
FB45	E2
FB46	E2
FB47	E2
FB48	E2
FB49	B1
FB50	B1
FB51	B1
FB52	A1
FB53	A1
FB54	B1
FB55	B1
FB56	A1
FB57	D1
FB58	D1
FB59	D1
FB60	C1
FB61	C1
FB62	D1
FB63	D1
FB64	C1
FB65	F1
FB66	F1
FB67	F1
FB68	E1
FB69	E1
FB70	E1
FB71	E1
FB72	E1
FB73	F1
FB74	F1
FB75	B4
FB76	B4
FB77	B4
FB78	B4
FB79	A4
FB80	A4
FB81	A4
FB82	B4
*FB83	F2
*FB84	F2
FB85	B4
FB86	B4
FL1	A4
FL2	A4



CN-1426A -B SIDE-

1-667-360-11

CN-1426A: ALARM IN CONNECTOR,
RELAY CONTROL CONNECTOR

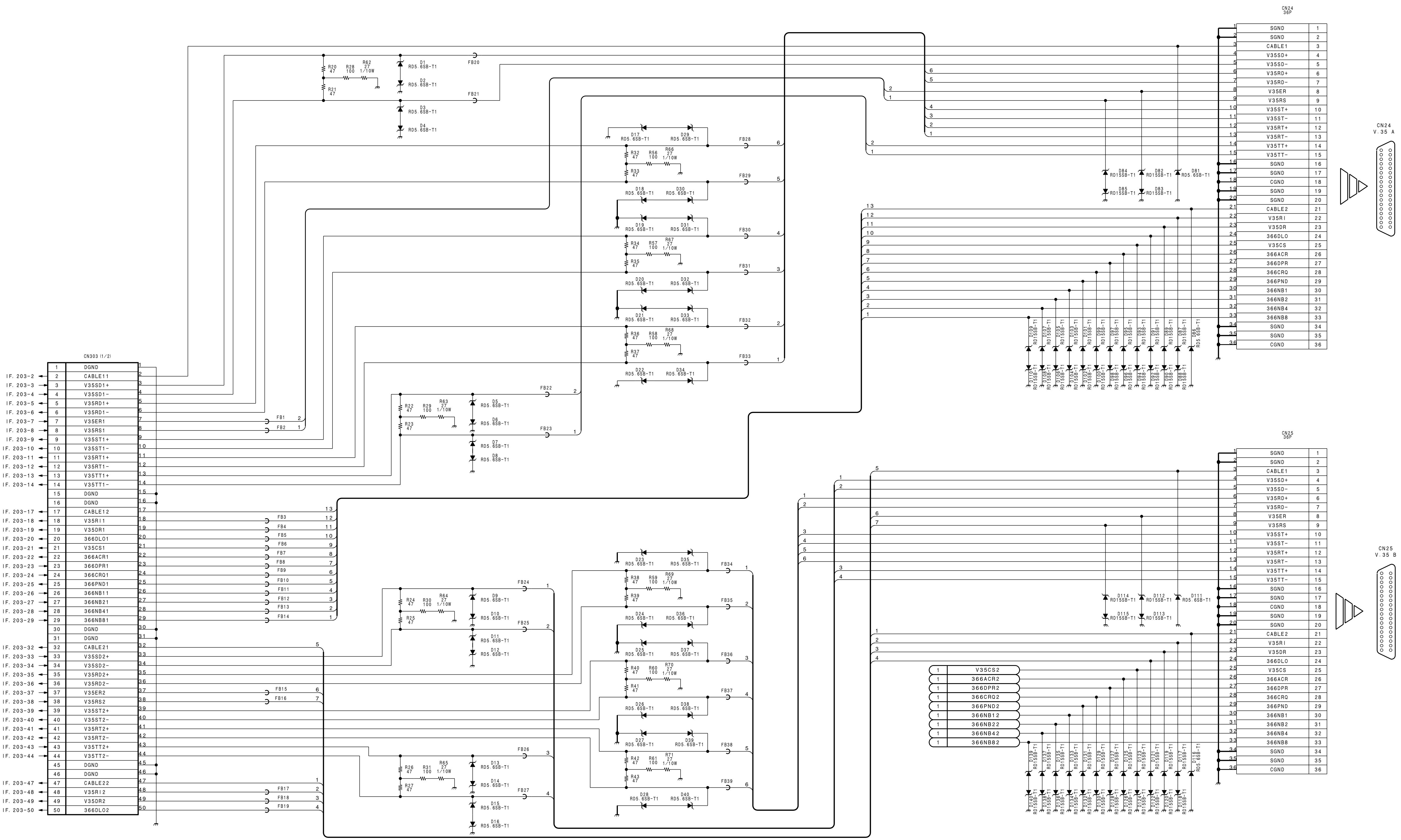

NOTE
NM:NO MOUNT
CN303 (2/2)
51 V35CS2
52 366ACR2
53 366DPR2
54 366CRQ2
55 366PND2
56 366NB12
57 366NB22
58 366NB42
59 366NB82
60 RS485A
61 RS485B
62 ON LINE
63 ALM0
64 ALM1
65 ALM2
66 ALM3
67 ALM4
68 ALM5
69 ALM6
70 ALM7
71 ALOUT
72 PIO0
73 PIO1
74 PIO2
75 PIO3
76 PIO4
77 PIO5
78 PIO6
79 PIO7
80 CAM11
81 CAM0
82 CAM1
83 CAM2
84 CAM3
85 CAM4
86 CAM5
87 CAM6
88 CAM7
89 CAM8
90 CAM9
91 CAM10
92 VISEL0
93 VISEL1
94 VISEL2
95 VISEL3
96 VISEL4
97 VISEL5
98 VISEL6
99 VISEL7
100 DGND
IF. 203-63 … IF. 203-99
FB40 – FB86
CN117 9P
A1 A2 A3 A4 A5 A6 A7 A8 GND
CN117 ALARM IN RS-232C1 (RS-422)
D41 – D56 RD39SB-T1
CN119 9P
P1 P2 P3 P4 P5 P6 P7 P8 GND
CN119 RELAY OUT RS-232C1 (RS-422)
CN121 15P
C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 GND GND GND
CN121 CAMERA CONTROL
FL1 LPF
FL2 LPF
D79 RD15SB-T1
D80 RD15SB-T1
D141 RD15SB-T1
D142 RD15SB-T1
CN23 15P
DGND VISEL0 VISEL1 VISEL2 VISEL3 VISEL4 VISEL5 VISEL6 VISEL7 ON LINE ALMOUT DGND DGND RS485A RS485B
CN23 CAMERA SELECT
D57 – D78 RD39SB-T1

CN-1426A (1/2)

B-PMS600-CN1426A/M

CN-1426A (2/2)

CN-1426A: ALARM IN CONNECTOR,
RELAY CONTROL CONNECTOR

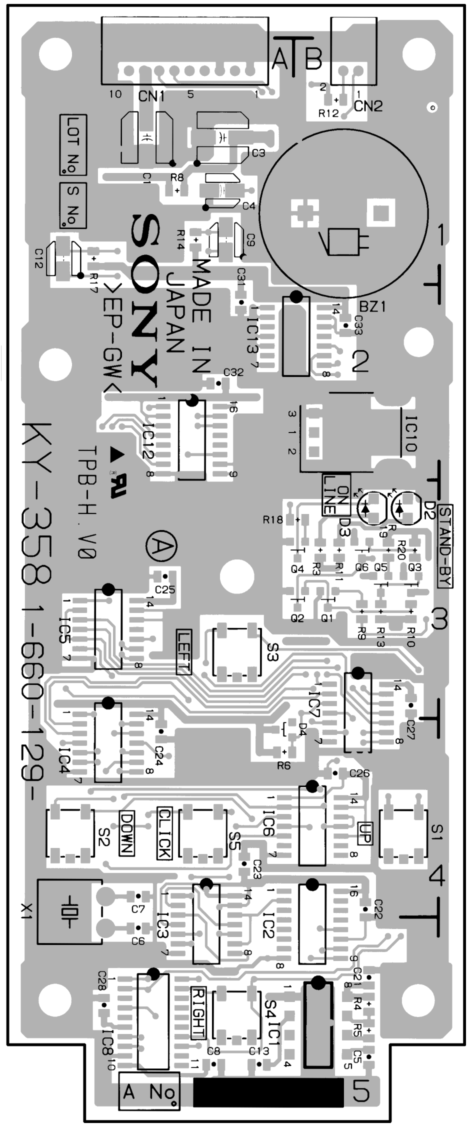

1
2
3
4
5
CN303 (1/2)
CN24 36P
CN24 V.35 A
CN25 36P
CN25 V.35 B
DGND
CABLE11
V35SD1+
V35SD1-
V35RD1+
V35RD1-
V35ER1
V35RS1
V35ST1+
V35ST1-
V35RT1+
V35RT1-
V35TT1+
V35TT1-
CABLE12
V35RI1
V35DR1
366DLO1
V35CS1
366ACR1
366DPR1
366CRQ1
366PND1
366NB11
366NB21
366NB41
366NB81
CABLE21
V35SD2+
V35SD2-
V35RD2+
V35RD2-
V35ER2
V35RS2
V35ST2+
V35ST2-
V35RT2+
V35RT2-
V35TT2+
V35TT2-
CABLE22
V35RI2
V35DR2
366DLO2
SGND
CGND
CABLE1
CABLE2
V35SD+
V35SD-
V35RD+
V35RD-
V35ER
V35RS
V35ST+
V35ST-
V35RT+
V35RT-
V35TT+
V35TT-
V35RI
V35DR
366DLO
V35CS
366ACR
366DPR
366CRQ
366PND
366NB1
366NB2
366NB4
366NB8
V35CS2
366ACR2
366DPR2
366CRQ2
366PND2
366NB12
366NB22
366NB42
366NB82
RD5.6SB-T1
RD15SB-T1
1/10W

CN-1426A (2/2)

B-PMS600-CN1426A/M

10-30

KY-358: TOUCH KEY BOARD, SIRCS RECEIVE
LED INDICATOR, RINGER

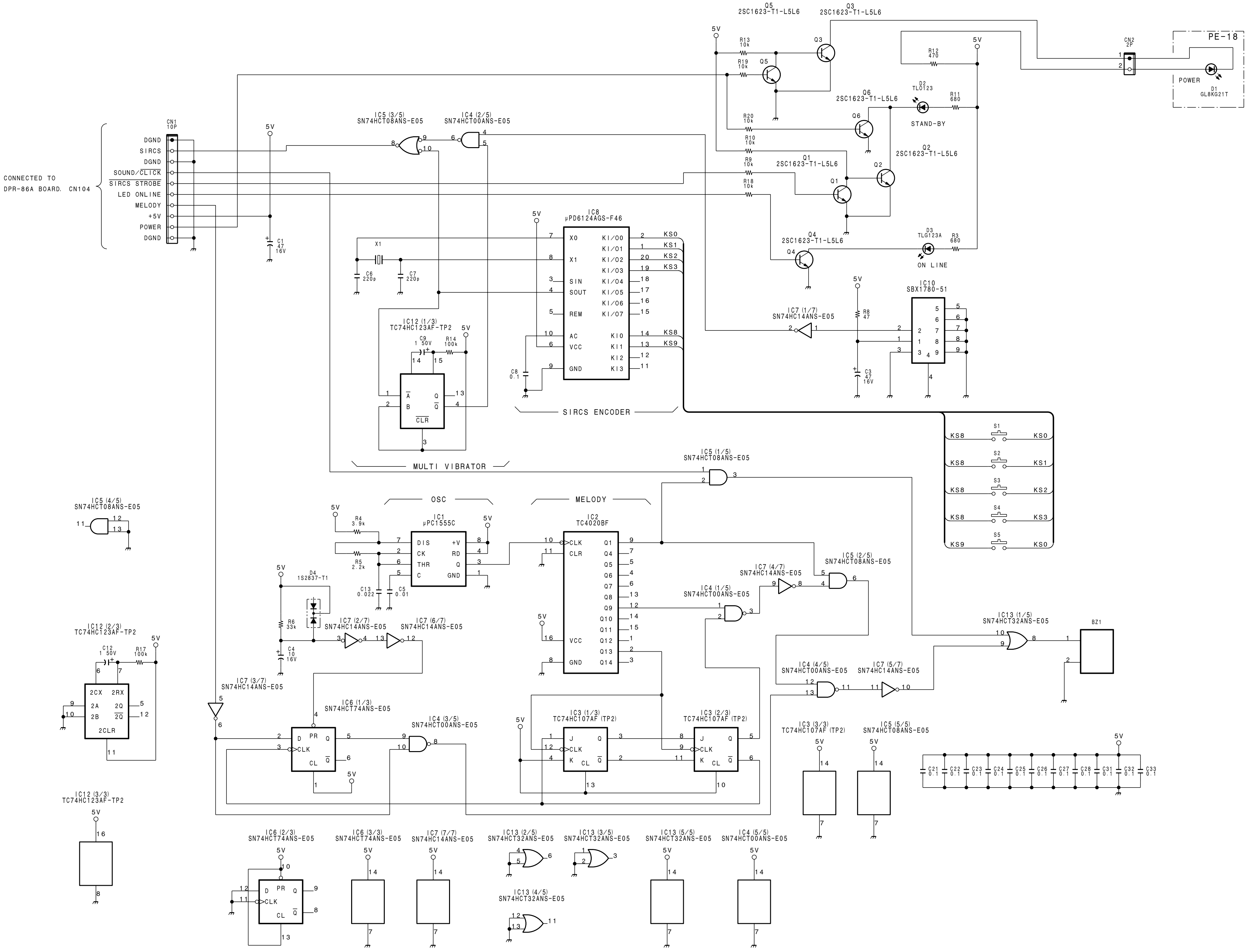

CN1
CN2
R12
BZ1
IC13
IC10
IC12
IC5
IC4
IC7
IC6
IC3
IC2
IC1
IC8
S1
S2
S3
S4
S5
DOWN
CLICK
UP
LEFT
RIGHT
ON LINE
STAND-BY
SONY
MADE IN JAPAN
KY-358 1-660-129-
TPB-H V0
A No
1
2
3
4
5

KY-358 -A SIDE-

1-660-129-12

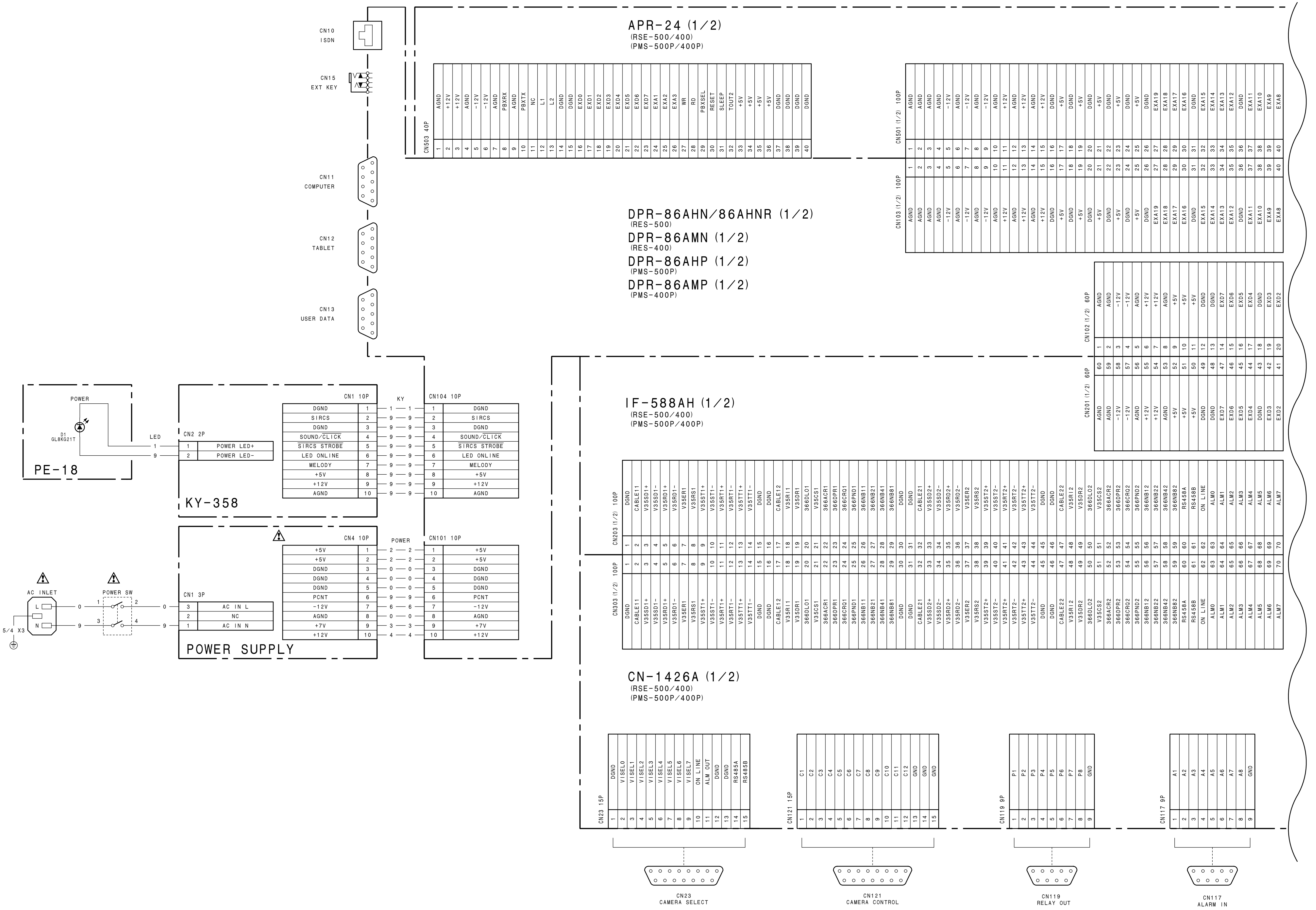
*: B SIDE

BZ1	B1
CN1	A1
CN2	B1
D2	B3
D3	B3
D4	A4
IC1	B5
IC2	B5
IC3	A5
IC4	A4
IC5	A3
IC6	B4
IC7	B3
IC8	A5
IC10	B2
IC12	A2
IC13	B2
Q1	B3
Q2	B3
Q3	B3
Q4	B3
Q5	B3
Q6	B3
S1	B4
S2	A4
S3	A3
S4	A5
S5	A4
X1	A4

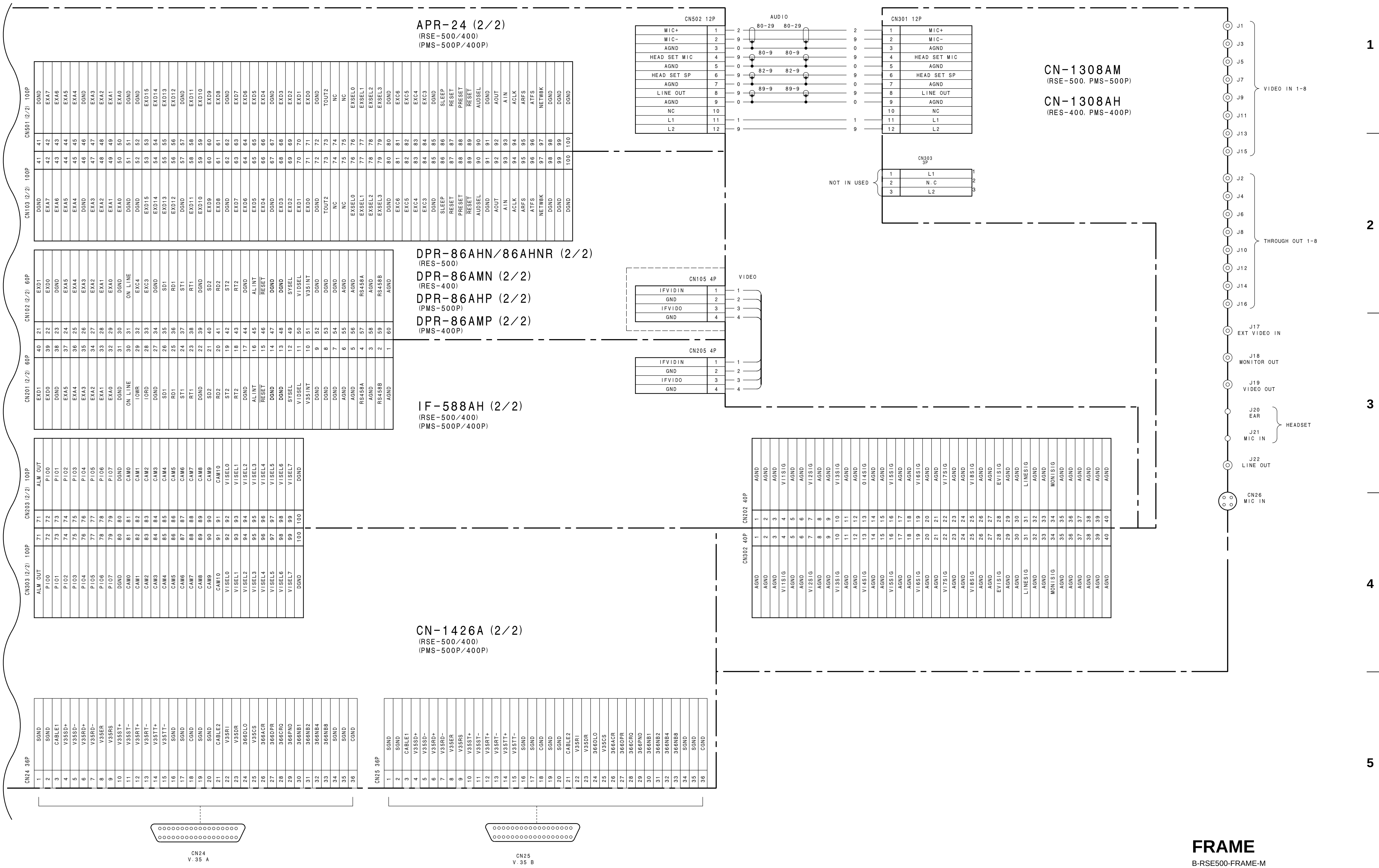

CN1 10P
DGND
SIRCS
DGND
SOUND/CLICK
SIRCS STROBE
LED ONLINE
MELODY
+5V
POWER
DGND
CONNECTED TO DPR-86A BOARD. CN104
IC5 (3/5) SN74HCT08ANS-E05
IC4 (2/5) SN74HCT00ANS-E05
Q5 2SC1623-T1-L5L6
Q3 2SC1623-T1-L5L6
Q6 2SC1623-T1-L5L6
Q1 2SC1623-T1-L5L6
Q2 2SC1623-T1-L5L6
Q4 2SC1623-T1-L5L6
D2 TLO123
STAND-BY
D3 TLG123A
ON LINE
CN2 2P
PE-18
POWER
D1 GL8KG21T
IC8 μPD6124AGS-F46
SIRCS ENCODER
IC12 (1/3) TC74HC123AF-TP2
MULTI VIBRATOR
IC10 SBX1780-51
IC7 (1/7) SN74HC14ANS-E05
S1
S2
S3
S4
S5
KS8
KS9
KS0
KS1
KS2
KS3
IC5 (1/5) SN74HCT08ANS-E05
IC5 (4/5) SN74HCT08ANS-E05
OSC
IC1 μPC1555C
MELODY
IC2 TC4020BF
D4 1S2837-T1
IC7 (2/7) SN74HC14ANS-E05
IC7 (6/7) SN74HC14ANS-E05
IC7 (4/7) SN74HC14ANS-E05
IC5 (2/5) SN74HCT08ANS-E05
IC4 (1/5) SN74HCT00ANS-E05
IC13 (1/5) SN74HCT32ANS-E05
BZ1
IC12 (2/3) TC74HC123AF-TP2
IC7 (3/7) SN74HC14ANS-E05
IC6 (1/3) SN74HCT74ANS-E05
IC4 (3/5) SN74HCT00ANS-E05
IC3 (1/3) TC74HC107AF (TP2)
IC3 (2/3) TC74HC107AF (TP2)
IC4 (4/5) SN74HCT00ANS-E05
IC7 (5/7) SN74HC14ANS-E05
IC3 (3/3) TC74HC107AF (TP2)
IC5 (5/5) SN74HCT08ANS-E05
IC12 (3/3) TC74HC123AF-TP2
IC6 (2/3) SN74HCT74ANS-E05
IC6 (3/3) SN74HCT74ANS-E05
IC7 (7/7) SN74HC14ANS-E05
IC13 (2/5) SN74HCT32ANS-E05
IC13 (3/5) SN74HCT32ANS-E05
IC13 (4/5) SN74HCT32ANS-E05
IC13 (5/5) SN74HCT32ANS-E05
IC4 (5/5) SN74HCT00ANS-E05
5V

KY-358
PE-18

B-PMS600-KY358/M


1
2
3
4
5
CN10
ISDN
CN15
EXT KEY
CN11
COMPUTER
CN12
TABLET
CN13
USER DATA
APR-24 (1/2)
(RSE-500/400)
(PMS-500P/400P)
CN503 40P
AGND
+12V
+12V
AGND
-12V
-12V
AGND
PBXRX
AGND
PBXTX
NC
L1
L2
DGND
DGND
EXD0
EXD1
EXD2
EXD3
EXD4
EXD5
EXD6
EXD7
EXA1
EXA2
EXA3
WR
RD
PBXSEL
RESET
SLEEP
TOUT2
+5V
+5V
+5V
DGND
DGND
DGND
DGND
CN501 (1/2) 100P
CN103 (1/2) 100P
DPR-86AHN/86AHNR (1/2)
(RES-500)
DPR-86AMN (1/2)
(RES-400)
DPR-86AHP (1/2)
(PMS-500P)
DPR-86AMP (1/2)
(PMS-400P)
CN102 (1/2) 60P
CN201 (1/2) 60P
IF-588AH (1/2)
(RSE-500/400)
(PMS-500P/400P)
CN203 (1/2) 100P
CN303 (1/2) 100P
POWER
D1
GL8KG21T
LED
PE-18
CN2 2P
POWER LED+
POWER LED-
KY-358
CN1 10P
KY
CN104 10P
DGND
SIRCS
DGND
SOUND/CLICK
SIRCS STROBE
LED ONLINE
MELODY
+5V
+12V
AGND
AC INLET
5/4 X3
POWER SW
CN1 3P
AC IN L
NC
AC IN N
POWER SUPPLY
CN4 10P
POWER
CN101 10P
+5V
+5V
DGND
DGND
DGND
PCNT
-12V
AGND
+7V
+12V
CN-1426A (1/2)
(RSE-500/400)
(PMS-500P/400P)
CN23 15P
DGND
VISEL0
VISEL1
VISEL2
VISEL3
VISEL4
VISEL5
VISEL6
VISEL7
ON LINE
ALM OUT
DGND
DGND
RS485A
RS485B
CN121 15P
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
GND
GND
CN119 9P
P1
P2
P3
P4
P5
P6
P7
P8
GND
CN117 9P
A1
A2
A3
A4
A5
A6
A7
A8
GND
CN23
CAMERA SELECT
CN121
CAMERA CONTROL
CN119
RELAY OUT
CN117
ALARM IN

A B C D E F G H


APR-24 (2/2)
(RSE-500/400)
(PMS-500P/400P)
CN501 (2/2) 100P
CN103 (2/2) 100P
DPR-86AHN/86AHNR (2/2)
(RES-500)
DPR-86AMN (2/2)
(RES-400)
DPR-86AHP (2/2)
(PMS-500P)
DPR-86AMP (2/2)
(PMS-400P)
CN102 (2/2) 60P
CN201 (2/2) 60P
IF-588AH (2/2)
(RSE-500/400)
(PMS-500P/400P)
CN203 (2/2) 100P
CN303 (2/2) 100P
CN-1426A (2/2)
(RSE-500/400)
(PMS-500P/400P)
CN24 36P
CN25 36P
CN24
V.35 A
CN25
V.35 B
CN502 12P
AUDIO
80-29
80-9
82-9
89-9
MIC+
MIC-
AGND
HEAD SET MIC
HEAD SET SP
LINE OUT
NC
L1
L2
CN301 12P
CN303
3P
NOT IN USED
N.C
CN105 4P
CN205 4P
VIDEO
IFVIDIN
GND
IFVIDO
CN-1308AM
(RSE-500, PMS-500P)
CN-1308AH
(RES-400, PMS-400P)
CN202 40P
CN302 40P
J1
J3
J5
J7
J9
J11
J13
J15
VIDEO IN 1-8
J2
J4
J6
J8
J10
J12
J14
J16
THROUGH OUT 1-8
J17
EXT VIDEO IN
J18
MONITOR OUT
J19
VIDEO OUT
J20
EAR
J21
MIC IN
HEADSET
J22
LINE OUT
CN26
MIC IN
1
2
3
4
5

FRAME

B-RSE500-FRAME-M

RSE-500 (UC)
RSE-400 (UC)
PMS-500P (CE)
PMS-400P (CE) E
9-977-340-01

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Broadcasting & Professional Systems Company

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